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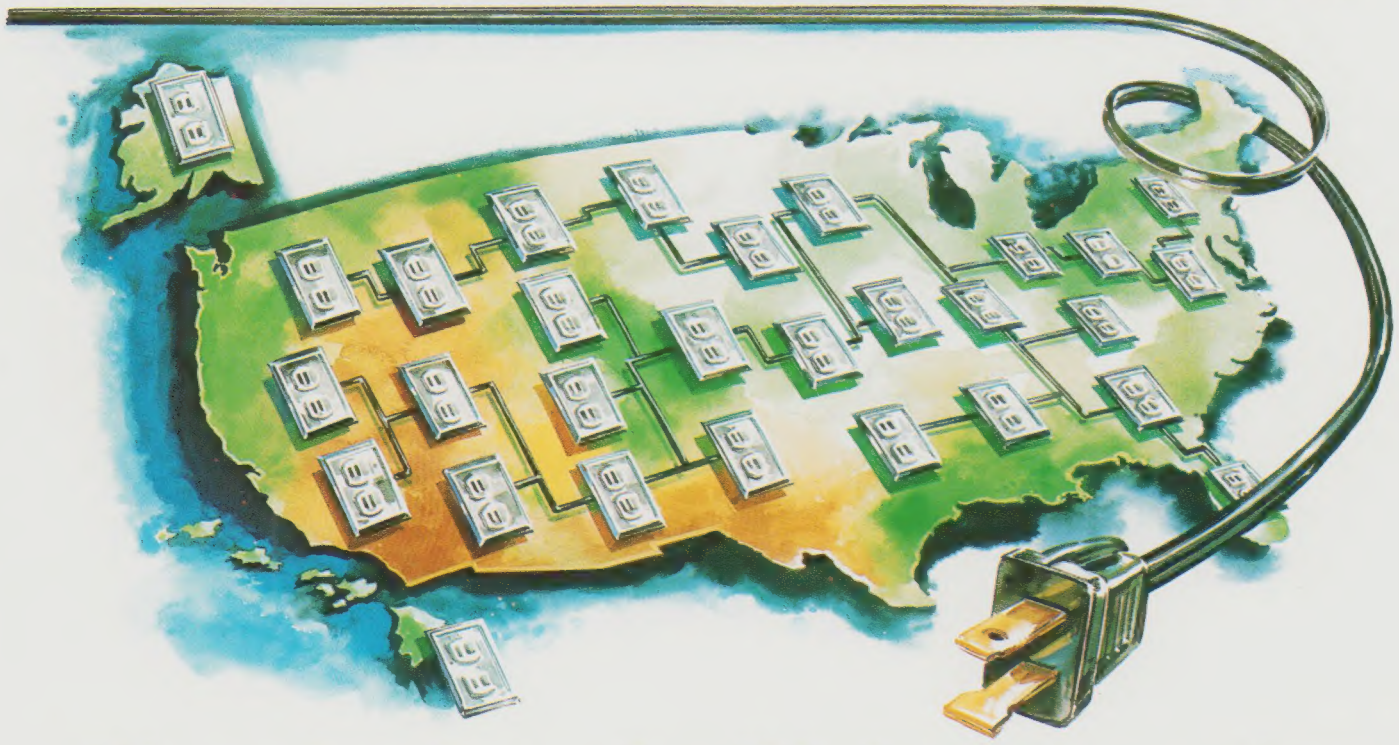

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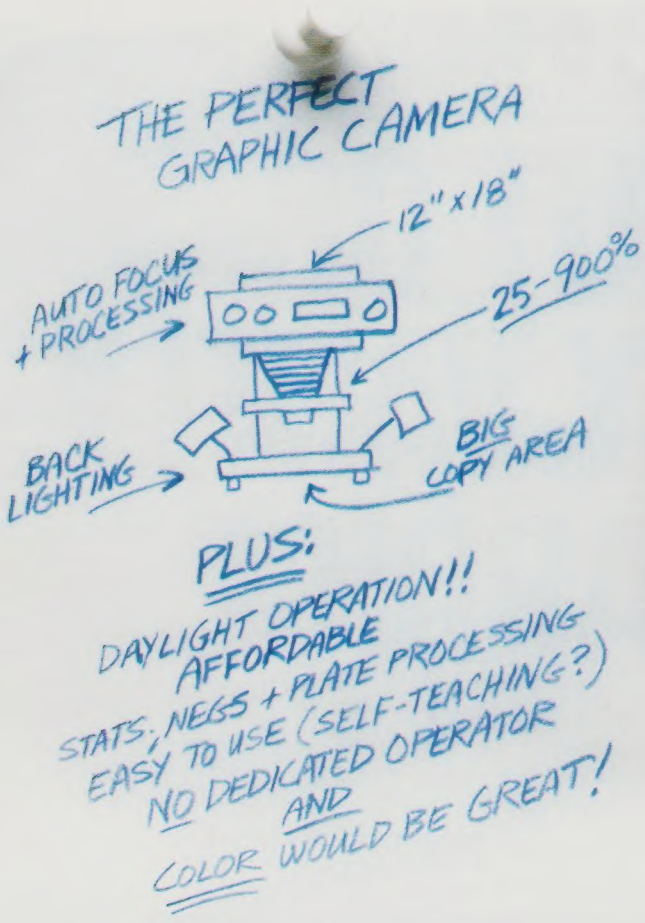

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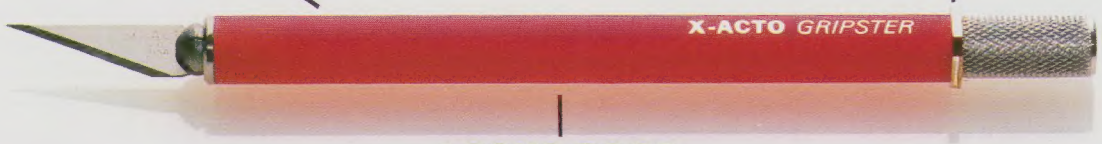

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September/October 1988

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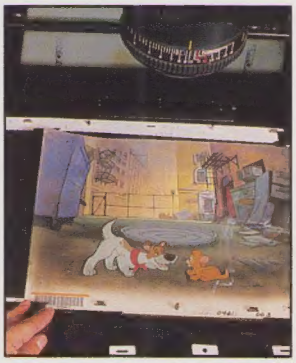

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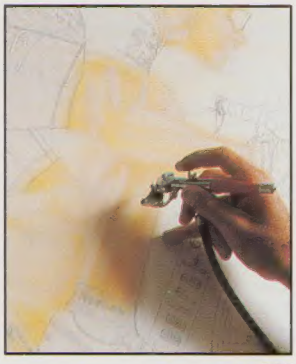

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Step-By-Step Graphics (ISSN 0886-7682/USPS 755-270) is published seven times a year (January, February, March/April, May/June, July/August, September/October, November/December) by Dynamic Graphics, Inc., in association with Dynamic Graphics Educational Foundation (DGEF), 6000 N. Forest Park Drive, Peoria, IL 61614-3592, for $42.00 per year in the U.S. and $51.00 per year outside the U.S.; single copies are $7.50 each. Group subscription rates upon request. September/October 1988, Vol. 4, No. 6. POSTMASTER: Send change of address forms to *Step-By-Step Graphics*, 6000 N. Forest Park Drive, Peoria, IL 61614-3592. Second-class postage rates paid at Peoria, Ill, and at additional mailing offices.

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Published in association with Dynamic Graphics Educational Foundation, a division of Dynamic Graphics, Inc., 6000 North Forest Park Drive, Peoria, IL 61614-3592; (309) 688-2300; FAX (309) 698-0831; Telex 269331DGUS UR. Editorial office: 2577 N. Downer, Suite 208, Milwaukee, WI 53211; (414) 962-9126; FAX (414) 962-9129.

EDITOR'S NOTE

Might we consider developing a feature on design and printing in Hong Kong? This question was posed at a recent graphic design conference by a textbook designer who had just been put in charge of exploring printing prices there, and he felt he could benefit from other designers' experiences. Those in the audience with some background in this area were quick to cite two advantages, especially when printing full-color, case-bound books: quality reproduction and reasonable prices. Hong Kong, in fact, has a reputation among print buyers as one of the world's most economical book printers. And according to some sources, prices can run anywhere from 20 to 50 percent less than in the U.S. So to learn more about all of this, we asked Marianne Barcellona, our most trusted and respected photographer, to take on several assignments there.

In her extensive travels for us and other clients—publications like *The New York Times*, *People* magazine and corporations like IBM—Marianne often finds herself in exotic locales, from Caracas one month to mainland China the next. But of all the places Marianne has worked, she finds China and Hong Kong the most fascinating. Each of the four times she has trekked there in the past decade, she has been struck by the warmth and friendliness of the people; and most recently, she noticed an emerging sense of community among the city's photographers. "I got the feeling that it is more of a community than in New York, but that may be due to its size. The expatriate community tends to stick together because they have Western tastes, and they often get overlapping assignments." After talking to a number of these British- and Australian-born shooters, she was left with the impression that they have traditionally had a hard time educating Asian clients that it is worth paying more for a better product. "I heard that there was a lot of undercutting and clients were interested in low prices instead of quality. Now things seem to be changing a bit; there is a sense of brotherhood emerging among Western and Asian photographers." Just in the past year, a loosely-knit organization along the lines of an ASMP has been formed there, she reports.

One of Hong Kong's most notable expatriates in the design community (and the subject of this issue's international feature on p. 46), Henry Steiner agrees with Marianne on this client education issue. But he says that such naiveté can also have some benefits: "If you give a client something rather dramatic and experimental, they are not going to know it, and they are going to let you do it as long as it makes sense. And I relish that." In addition to hints on working with Asian clients and vendors, this story also examines how the rich Asian imagery gives Mr. Steiner's work a distinctive flavor.

Nancy Aldrich-Ruenzel

Nancy Aldrich-Ruenzel
Editorial Director

Body Language Marianne Barcellona captures a critical moment as Hong Kong-based photographer Neil Farrin shoots transit workers in the wee hours of the morning.

Photo by Neil Farrin

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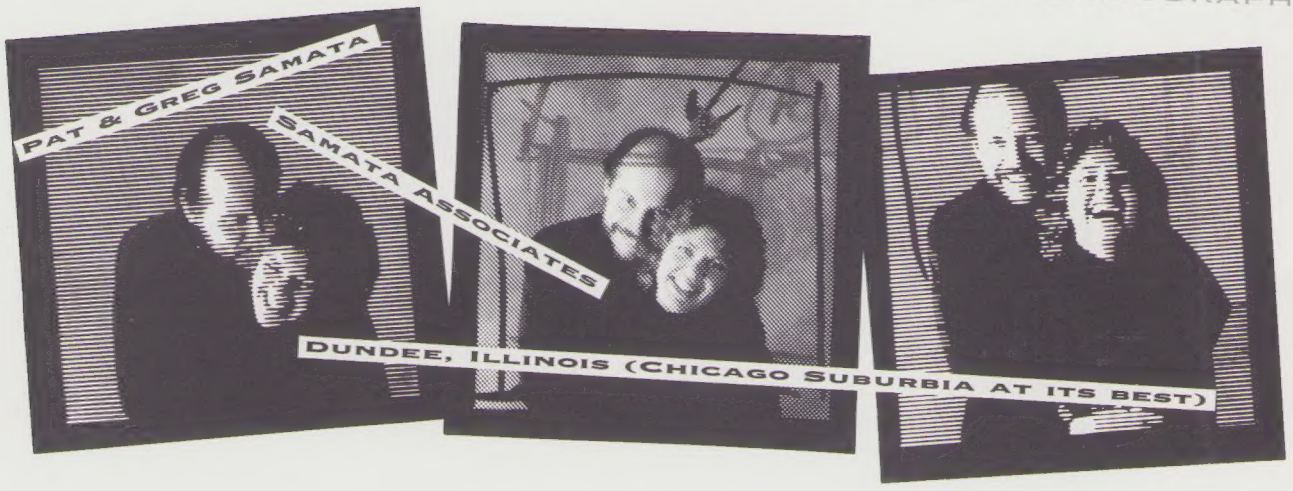

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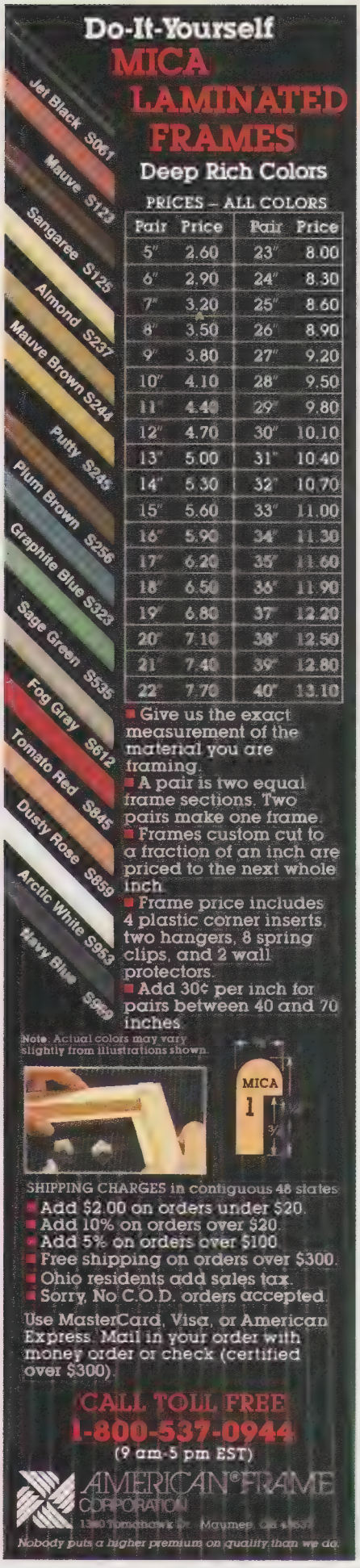
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LETTERS

TV Set Design Revisited

Aloha! I am mentioned in the story entitled "Television Production Design" (Vol. 4, No. 4), and in the interest of accuracy, the following should be noted:

1. The plastic foam used was styrofoam and not polyurethane foam. The latter does not come in the large sizes that were required and will not respond to solvents to give a pitted surface mentioned in simulating weathered stone.
2. My name is spelled LeBuse, not Lebuse, and I am a full-time professional sculptor. Upon occasion, I carve tikis and so on for movies and opera.
3. Professional quality butcher, boning and slicing knives are recommended for plastic foam carving and must be razor sharp or the foam will tear and details will be lost. I do not use kitchen quality stainless steel knives which are difficult to sharpen and will not hold the edge needed.

Aside from these corrections, it was an excellent look at movie propmaking and set design, a field I have been associated with since 1947.

Mark LeBuse
Pahoa, Hawaii

Finds It Through the Grapevine

In Vol. 3, No. 3, we read about Will Vinton and his Claymation raisins, but as a brave designer trying to obtain the compound he uses, I have turned up nothing. Is this material a trade secret? Where can I obtain the compound?

Stephen B. Blake
Southbury, Conn.

Editors' Note: Although many different modeling compounds are commercially available, the product that carries the trade name "Plastelene" is available from Van Aken International, 4531 Shirley Ave., El Monte, CA 91731; (818) 350-8820.

More on IBM Graphics

I read with interest your comments on Micrografx Designer ("Solutions," Vol. 4, No. 5). I would like to add that Designer can also be imaged from the PIC file format through high resolution digital film recorders to produce brilliant 35mm color slides. This is an advantage over most Mac packages currently available.

If slides are desired, I would recommend you check the version you are currently working with; early versions had problems with the PIC file structure, which we have been assured have been corrected in the August (1988) release.

Elizabeth G. Lawhead
Production Manager
Slidepro, Inc.

For your information, IBM has announced the IBM DisplayGraphics licensed program, a full-function, interactive package for the company's 80286- and 80386-based personal computers running the DOS operating system.

The price of the program, which is available starting in July, 1988, is $650.

Jane L. Lee
Workstations Information
IBM Corporation ■

Address your letters to: Editor, Step-By-Step Graphics, *6000 N. Forest Park Drive, Peoria, IL 61614. Letters may be edited for purposes of clarity or space.*

EDITOR'S CORRECTION The book review for "Dorfsman & CBS," which ran in the March/April 1988 issue of *Step-By-Step Graphics*, requires clarification. American Showcase, not Rizzoli International Publications, is the book's publisher. Rizzoli distributes the book.

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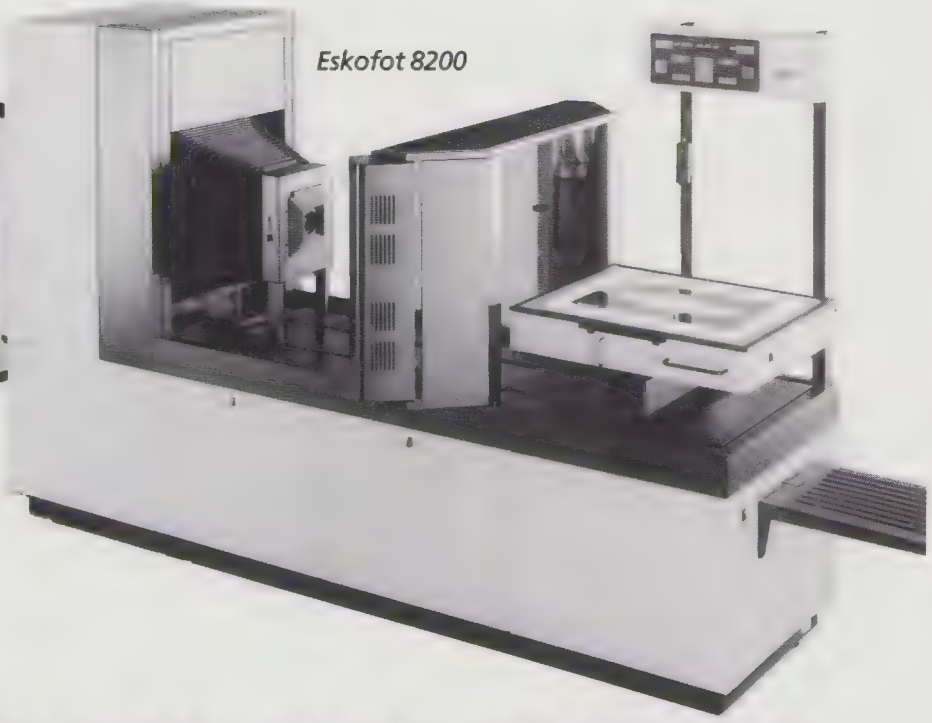

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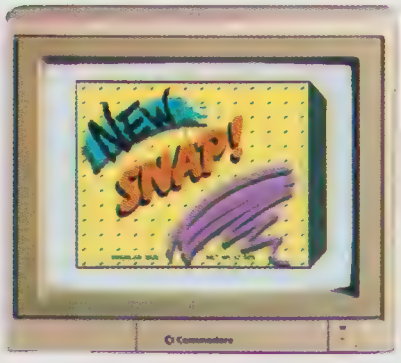
Circle 5 on Information Card

"I hate red."

"The name is too small."

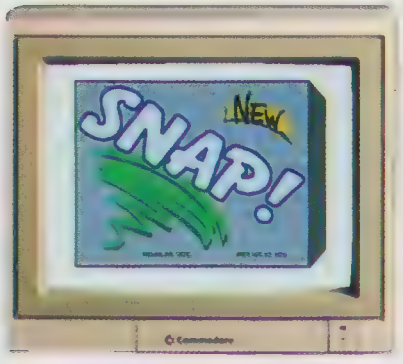
"Too large."



"Hmmm. Looks empty."

"But will it work on a can?"

"I don't know..."



"Another background?"

"Could we see it in red?"

"Perfect."

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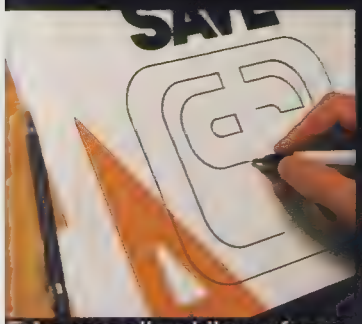

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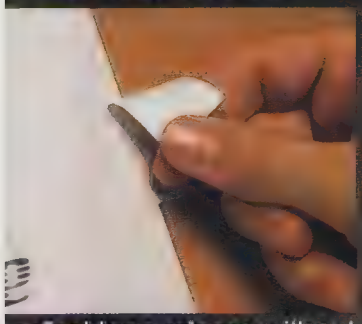

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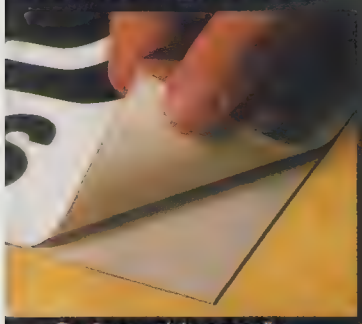

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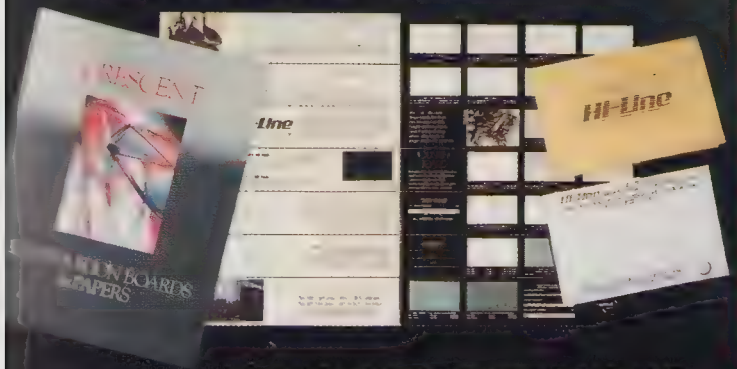

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SOLUTIONS

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Problem I am an illustrator who has had consistent success in my limited geographic area, which is, unfortunately, somewhat isolated and far from any major metropolitan areas. How can I branch out and begin to get some more widespread exposure?

Solution According to Roz Goldfarb, whose company Roz Goldfarb Associates, Inc. represents art directors, copywriters, graphic and industrial designers, the best approach for anyone stalled in a regional market is to take it step by step.

First, she suggests you research national magazines and corporations located in your geographic area. Visit these organizations and try to build up your business with them. If this step is successful, your work will be distributed on a wider basis, thereby increasing your visibility. You will be able to use these clients as stepping stones in gaining more clientele.

At this point, Goldfarb says the key to success for an illustrator (especially one who is isolated geographically) is to attract a good rep who can help scout out new clients. But this is a catch-22 situation, she adds. "First, you need to develop a good reputation through your work so that a rep will be interested in working with you. A good rep will recognize someone they want to work with."

Once you have proper representation, Goldfarb says it does not matter where you are located. "That is the freedom that comes from working in illustration," she says. Your rep brings in the business; you are freed up to illustrate.

If you are unable to cultivate exposure-generating clients in your area, Goldfarb suggests you make repeated visits to more distant cities in order to make personal contacts with art and creative directors. Leave plenty of samples of your work so that they will remember you when the next job rolls around.

On that same note, in a creative business, it is extremely important to have creative self-promotional pieces that will stick in the mind of an art director. For more information on developing your own memorable piece, consult "Look for the Hook" (*Step-By-Step Graphics*, Vol. 3, No. 5, p. 104).

—SBS

Problem Many of the art materials I use everyday are toxic, and I worry about my constant exposure to them. Are safe substitutes available? For example, can I use anything other than rubber cement thinner to remove wax from boards? What else can I do to protect myself?

Solution While some graphic arts products, like rubber cement thinner, are indeed toxic, their manufacturers do spend time and money to protect your health. Many constantly work toward making their products safer. Several marker manufacturers, for example, have introduced alcohol- and water-based pens to their product lines to supplement their xylene-based models. Check with your art supply dealer—less hazardous substitutes may be readily available.

Many products, however, would not work without the toxic ingredients they contain. This includes solvents like rubber cement thinner. Manufacturers who are unable to remove hazardous contents from their products usually take great care to give the consumer proper usage instructions.

Deborah Fanning, executive vice president for the 40-year-old Art and Craft Materials Institute, says that her organization has been instrumental in assisting manufacturers to place warning and instructional statements on their packaging. The American Society for Testing Materials is also active in this field. "Fifteen percent of art materials need cautionary labels," she says. "So you should try to buy products that have been evaluated by ACMI or ASTM. Then, the most important things you can do are to carefully read the labels, use the product accordingly, and always provide yourself with proper ventilation."

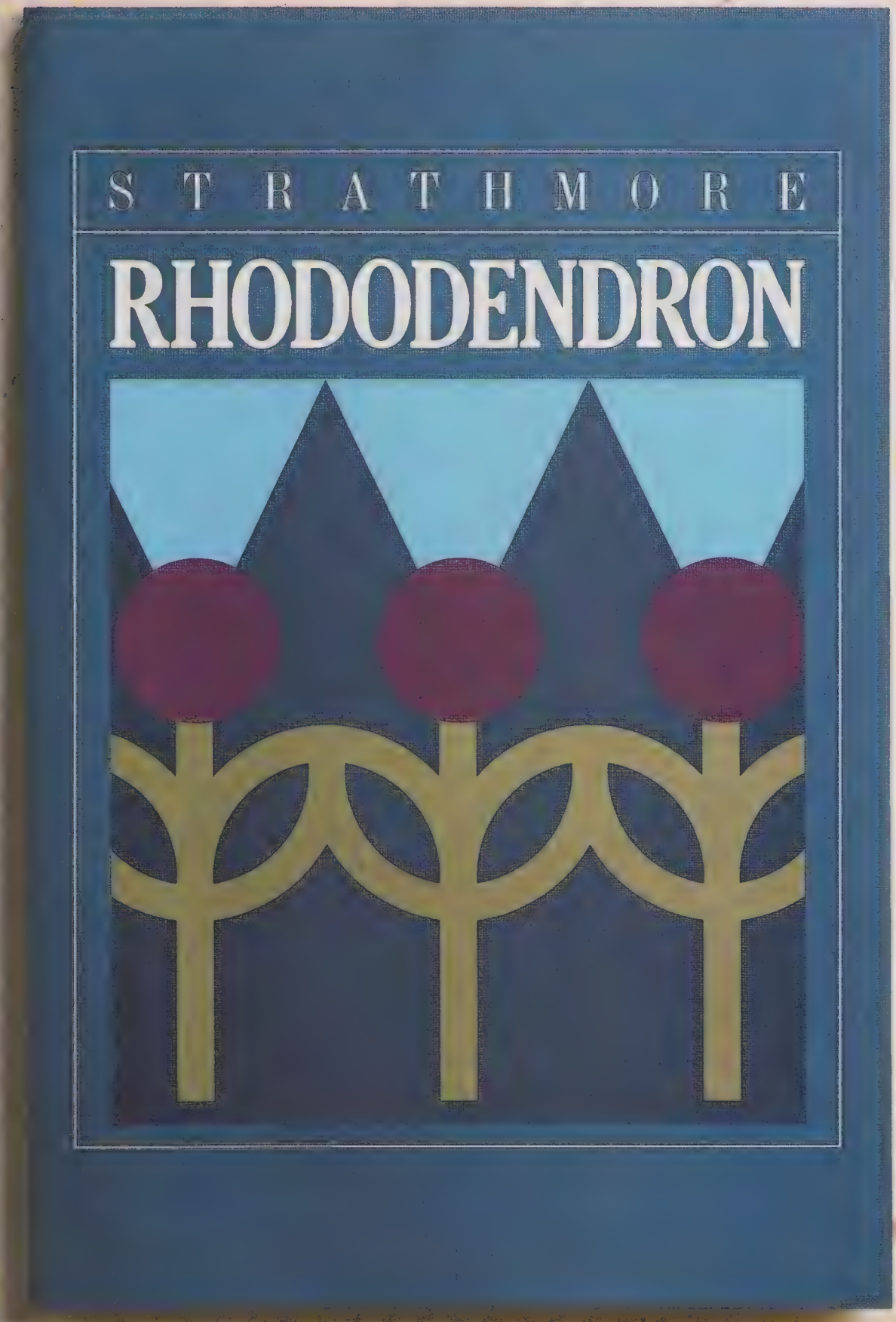
The ACMI employs three different seals for products. An "AP" seal indicates that the product is non-toxic, even if ingested, inhaled or absorbed. Many art products for children carry this designation. A "CP" seal also means that the product is non-toxic, but that it has also been given a quality certification. The "HL" seal, which stands for "health label," can be found on products which should be used with care but which are labeled properly for safety.

Products within the same line, even from the same manufacturer, can carry different seals, so it is especially important to check each product as you use it, Fanning says. "For example, you could have a line of 100 colors of oil paint. Ninety-four of them could be perfectly non-toxic and carry either the 'AP' or 'CP' seal, but then six of them could contain compounds which necessitate the 'HL' seal."

The greatest dilemma for the graphic artist is generally inhalation of toxic materials. A proper breathing mask can offer protection. A technical representative at 3M Corporation, which produces such masks, says there are three basic varieties. A cartridge-style mask is usually made of metal and plastic or glass and carries replaceable cartridge filters. A maintenance-free or disposable mask offers the same protection as the cartridge type, but it is made of paper (sometimes with a carbon filter) and should be thrown away after its recommended usage. Most cartridge and disposable masks are approved for protection from most mists as well as organic vapors that might be emitted from solvents. (Always check the mask's labeling carefully, however.) The last type of mask, termed "nuisance-level," is not approved for organic vapors. The key to selecting the proper mask is to identify accurately what you are trying to protect against.

—SBS ■

If you would like help in solving a visual communications problem, send your questions to "Solutions" Editor, Step-By-Step Graphics, *6000 N. Forest Park Drive, Peoria, IL 61614-3592.*



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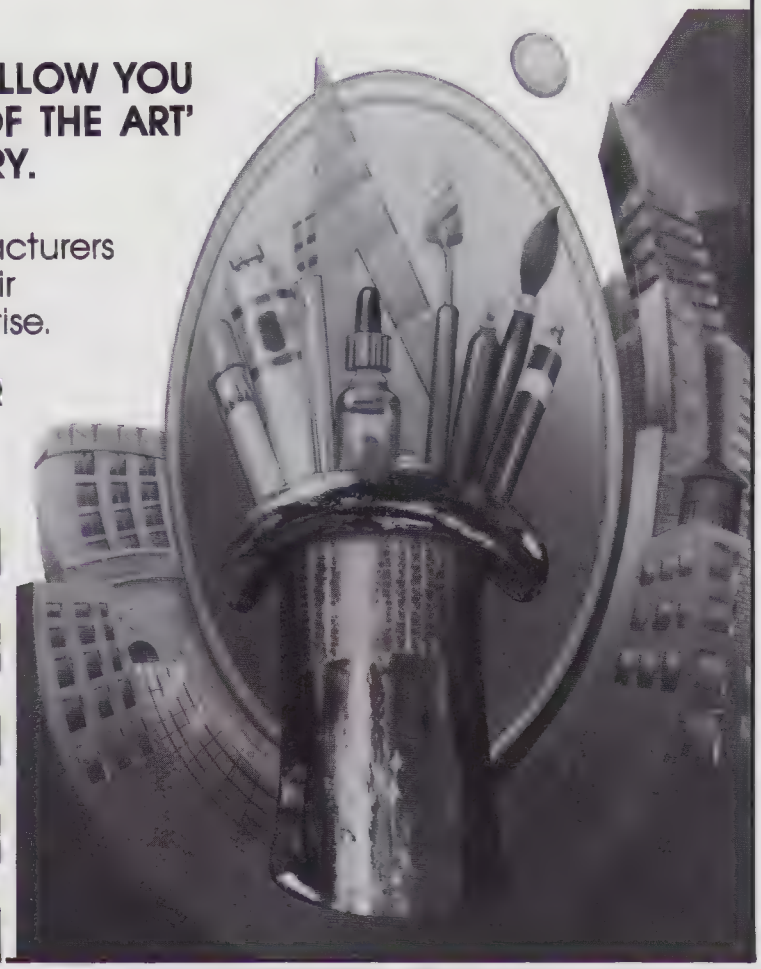

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Illustration By Dave Malone

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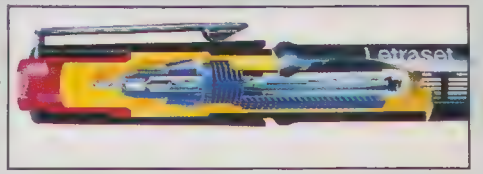

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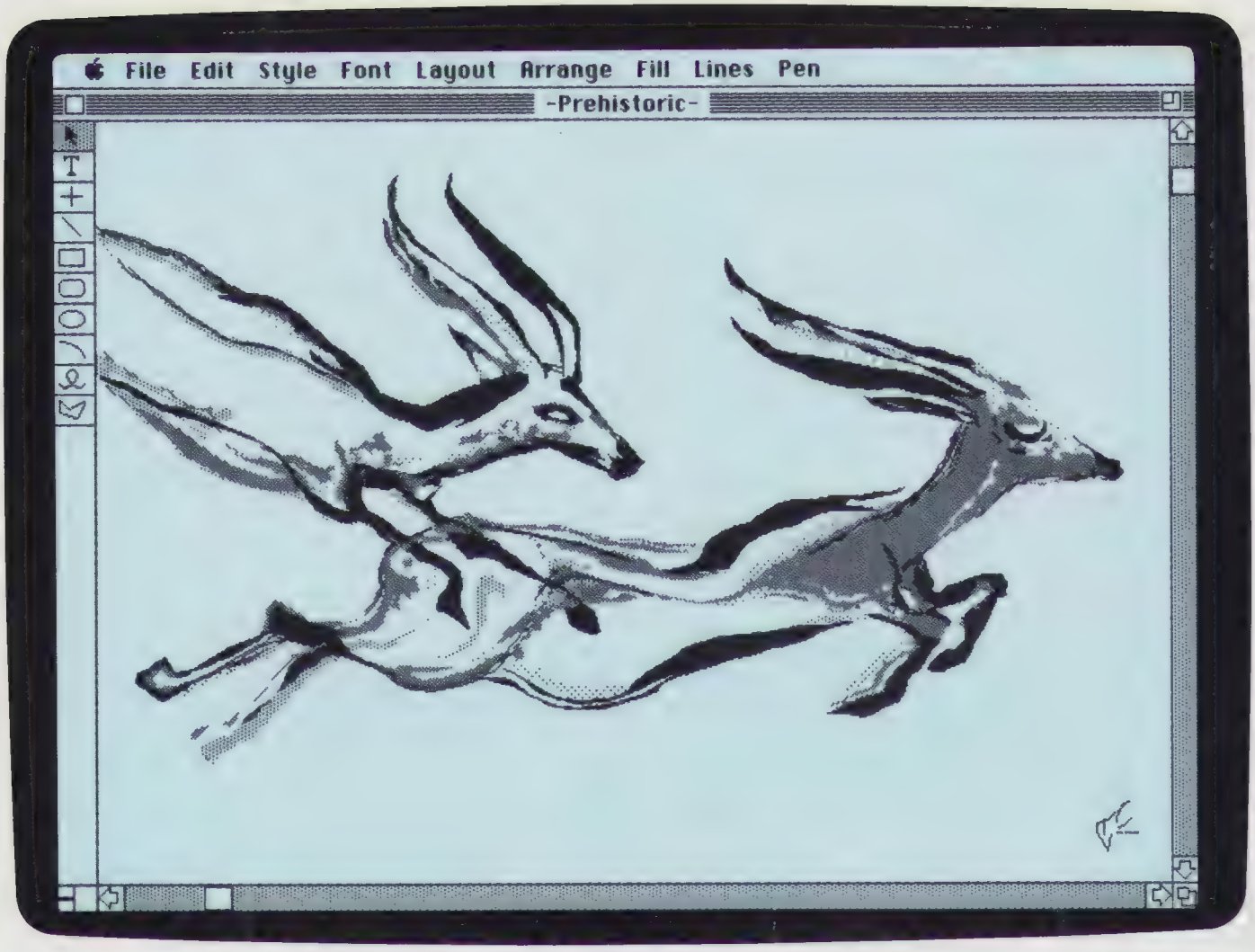

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Heightening Reality With Acrylics

Illustrator Marvin Mattelson combines strong concept and life-like realism in a subway poster for the School of Visual Arts.

Artists have always been fascinated by light and its effects upon form and color. For some there is endless delight in studying these effects and searching for a means to capture those observations in paint. And New York illustrator Marvin Mattelson counts himself among them. He is enamored by the details nature serves up and goes to great lengths to give us a microscopic look at them. His intrigue with the visual world has resulted in a style of tightly rendered, highly polished images that reflect his arduous study of form and color. Direct observation, the scores of research photos he takes and books on color theory and perception provide the foundation upon which he builds.

Although Mattelson's fascination with "how one perceives" has resulted in a working method that requires extensive photo references, his goal is not photographic reality. Instead, his attempt is to depict how human beings see. "I have never been comfortable being called a photo-realist. To me, this means copying photographic effects such as black shadows and washed out highlights in order to make the painting look like a photograph. What I try to do is paint the way we see, not the way the camera sees. There are a lot of inaccuracies in the camera; it looks through one lens, not two, like your eyes. Therefore, the camera alters edges and makes them very sharp. That is not the way we see things. Instead, I use photography to help me collect detail. It is the equivalent of a writer researching a scene in order to bring his narrative to life."

PHOTOGRAPHY

In his effort to mirror the way the eye sees, Mattelson has his reference photos printed in varying exposures. Since the negatives have much more information than can be recorded on a single print, he orders light, medium and dark black-and-white prints from his contact sheets to the exact size they will appear in the painting. These prints provide him with a range of information on the form and texture of his subject material. For example, to paint shadows, the artist will study a very light print to see details within the shadow areas that the eye can see but that the camera records as dark. In contrast, when rendering highlights, he will study a dark print of his reference to examine the highlight's shape, size and intensity. A print exposed at a mid-range will give him information on local values. If he depended only upon one reference, his work would lack the detail that the eye easily picks up.

Depending upon the approach he will take with the illustration, Mattelson makes either a fully detailed drawing or a precise outline. He then transfers the drawing to the board and applies color. In this article, Mattelson's method of applying opaque color will be described. With this method, the artist first lays in flat patterns of opaque color over which he draws a more detailed image with water soluble colored pencils. Next, he either wipes away the excess pencil or paints on top of it. In an accompanying sidebar, an alternate method of color application will be demonstrated: applying color in transparent glazes over a detailed drawing. (See "Transparent Acrylic Painting.")

ACRYLICS

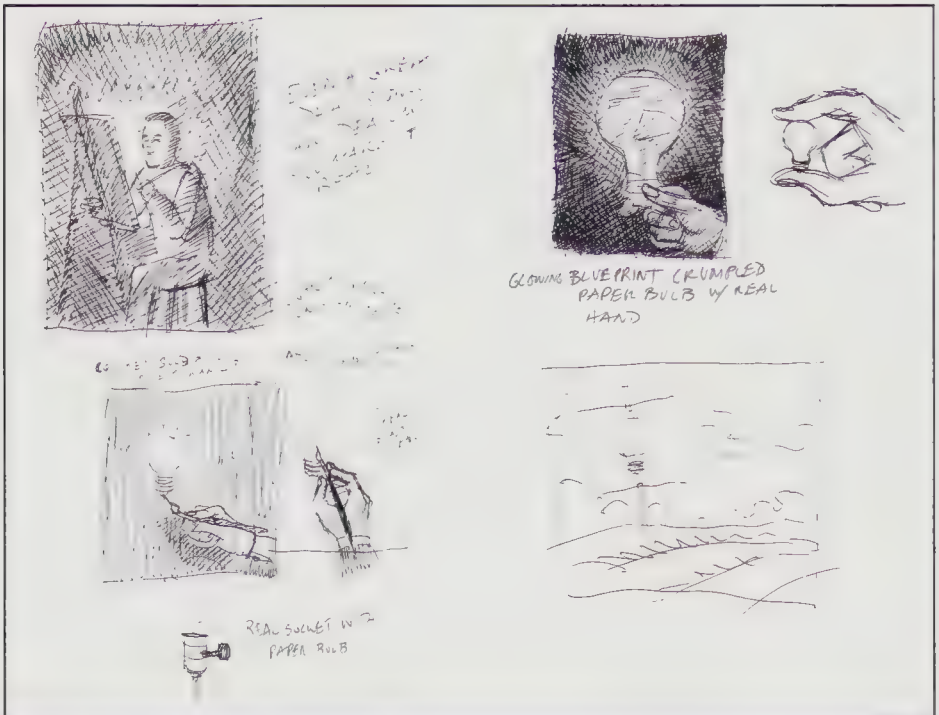
The artist's working methods have directly resulted from his choice of medium—acrylics—which he was initially attracted to because he could clean up with water instead of turpentine. But acrylics demand different painting techniques, especially when rendering in a highly realistic style. With the polymer-based pigments, several layers of paint are required for the color opacity that will achieve that illusion. Its plus, says the artist, is that anything can be changed. The acrylic paints dry quickly, which allows him to add successive layers of color in a short period of time.

Contrary to the theory that acrylics should be applied like watercolor, in transparent layers, after much experimentation, Mattelson found it easier painting light into dark. By laying in flat areas of opaque color first, then building up the details, he can shorten his painting time.

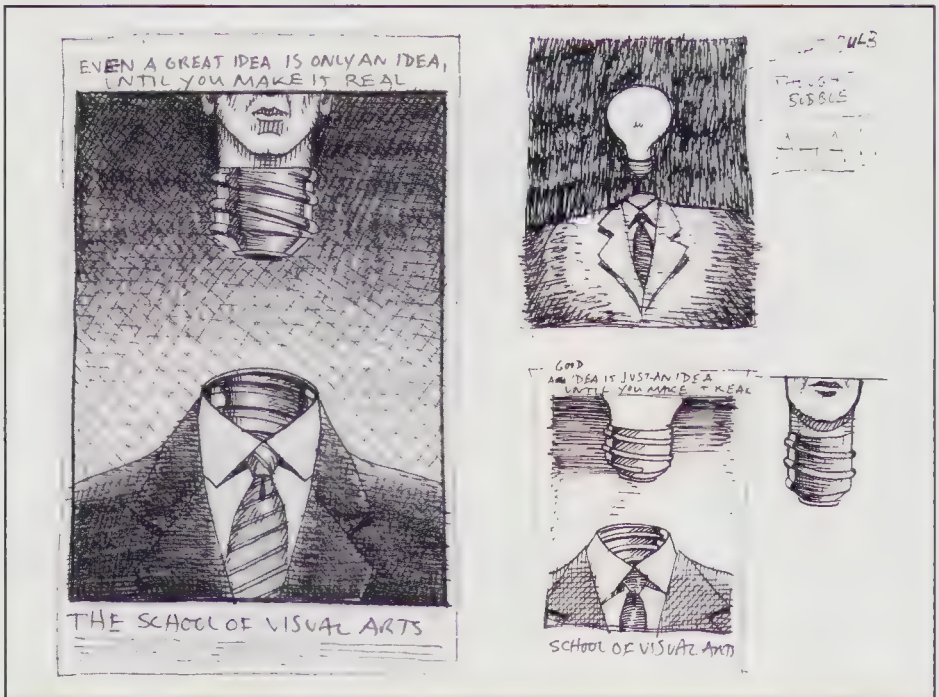
Subway Art Mattelson's 29 x 44-inch poster for the School of Visual Arts in New York was three weeks in the making. Preparations included having a costume made, hiring a model and shooting extensive reference photos.

Even a great idea is only an idea until you make it real.

School of Visual Arts



1 After meeting with SVA founder and chairman Silas Rhodes to discuss the poster's concept, "Even a great idea is only an idea until you make it real," Mattelson drew some exploratory sketches in Pentel pen, many of which concentrated on light.



2 Mattelson drew this "man as lightbulb" concept at the breakfast table and felt it was exactly what he wanted—an unorthodox means of expressing the idea. He feels the strongest solutions are often based upon familiar images used in a new way.

However, when painting a very light or white background, the artist finds it easier to use transparent washes. With this method, he begins with a detailed drawing, lays in the washes, then works toward opacity. (See "Transparent Acrylic Painting.")

While blending is more difficult with acrylics because the paint dries so quickly, Mattelson has adopted a method to achieve the illusion of blending: He layers small, successive strokes of paint next to one another. The key to Mattelson's success with this method is that his values are always on target.

"I think acrylics are more difficult to master," says Mattelson. "Oil paint allows you to blend things together—you can put a light color next to a dark color and blend with a fan brush. With acrylics, everything has to be worked out, but ultimately, there is more control. With oil, it is much easier to get soft edges. You really have to work at that with acrylics. On the other hand, there is a sharpness that you just can't get with oil."

Because of the amount of detail he puts into a painting, Mattelson feels most comfortable working at a size of approximately 9 x 12-inches. But on occasion, he will work larger. (The painting profiled here is 12 x 16-inches.) Despite their small size, the paintings reproduce well when enlarged because the pigments are dense and the forms completely realized.

LASCAUX PIGMENTS After working with many brands of acrylics, Mattelson now prefers Swiss-made Lascaux paint because he says it is consistent from color to color, it has more vibrancy and the pigment is highly emulsified. A medium-size tube of cadmium color can be purchased for less than $6. Other colors are less expensive.

Mattelson mixes all of his color in value sequences using general proportions of 50 percent paint, 25 percent water and 25 percent medium. He mixes enough pigment to last throughout the entire painting process. By doing so, he avoids having to match color, which is sometimes difficult because acrylic paint dries lighter. He says the gloss medium gives the darks "a little more punch" than matte medium or no medium.

BOARDS Several years ago, Mattelson gave up painting on linen canvas and has been working on triple weight, German-made, Schoellershammer boards, which he describes as "an incredible" painting surface

(at about $20 for a 30 x 40-inch board). He paints directly on the board without an initial application of gesso.

LIGHTING

Although Mattelson now paints under natural light, when that is not possible, he recommends painting under 5,000° Kelvin light so colors will be reproduced accurately. "If an artist were to paint under normal fluorescent light and the work was shot for reproduction with a different color temperature, the colors of the painting would change." In addition, the lighting conditions under which an artist paints should remain the same until a work is complete.

COLOR VIEWING Next to his drawing table, Mattelson keeps a lightbox where he can view color transparencies. If for any reason he is not satisfied with the color, he places a Kodak color correction filter over his reference. The filters are available in a variety of colors including magenta, yellow, green, sienna, blue and red, and in different percentages.

"Rather than trying to match a color that is in my head, which is really an elusive way of doing things, I have something to match to," explains Mattelson. "Sometimes I even view my paintings through these filters if I am not happy with the color in a particular area. Putting the filters over that area gives me a basic indication of what direction I have to move into, especially with skin tones. I know whether adding a little more green or blue will give me what I need. It is a terrific way of visualizing."

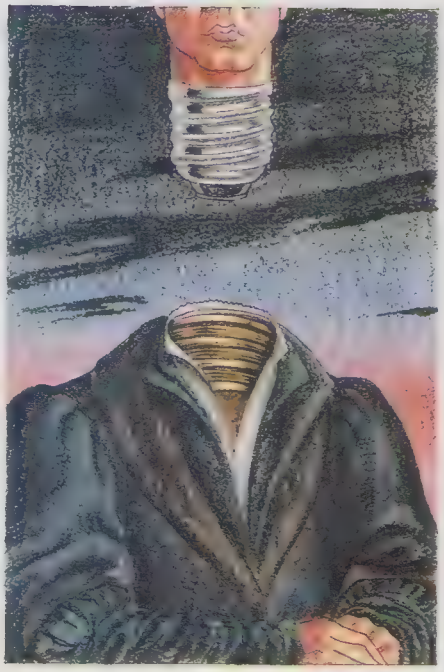
Mattelson also uses the color viewing kit when he wants to simulate a different kind of light than his reference indicates, for example, a cool evening light. "I can hold the filter over a color photograph and see the effects a strong blue light would have on flesh tones. At times, I will also project light through the filter onto an object to see the effect that a certain color of light has upon it."

The artist says he has gained considerable knowledge about color by reading books on color theory. One of his favorites is "Creative Color," by Faber Birren. "The more you can understand the effect color has, the more you can control those effects and use them for your own means," he says.

SVA POSTER

A recent poster assignment for the School of Visual Arts tested not only Mattelson's highly regarded painting skills, but what he feels is his often overlooked conceptting ability. "I think one of my strong points is my ability to come up with images, but I am often denied that opportunity because of my technical ability," says the artist. "I have enough people who come to me with the imagery all spelled out. This was a good opportunity to show both aspects of my skills."

The autumn and spring posters produced by the faculty at the School of Visual Arts have adorned the New York subways since 1947, as long as the school has been in existence. A retrospective exhibit of these posters was recently shown in New York and California. First commissioned as a recruitment tool for the school by SVA founder and president Silas

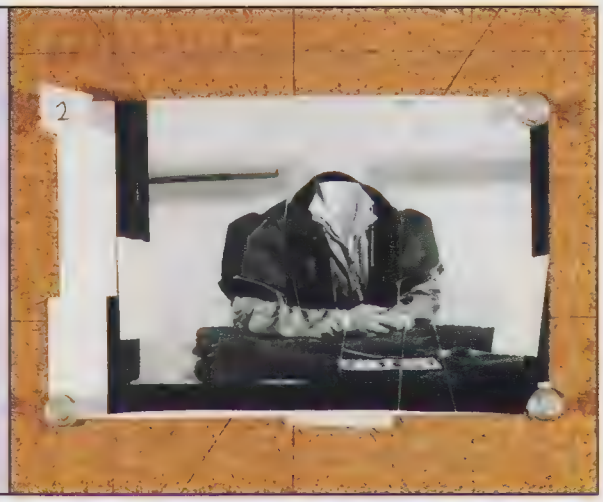


3 Instead of drawing the headless figure in modern clothing, Mattelson decided that since the Renaissance was the age of ideas, the separated body should be clothed in a costume of that era. To present his concept to Rhodes, Mattelson executed a 5 x 8-inch color sketch, again using a Pentel pen for the linework and Prismacolor and Caran D'Ache pencils for color and values. Rhodes thought the concept was "brilliant" and asked Mattelson to proceed with the painting.

4 Mattelson shoots reference photography at the Robert Osonitsch studio. He shoots black-and-white and color references with a 2¼-inch camera with an interchangeable back. The black-and-white prints (shot with Plus-X Pan 120) are used as an aid in painting detail; the color transparencies (Ektachrome 100 professional) help him determine the palette he will use.

Photos by Marvin Mattelson

5 While taking reference photos, Mattelson concentrates upon parts of the image—the left arm or folds of the blouse—rather than the whole. He then cuts apart the contact sheets of the areas he likes and creates a mini-collage. In this way, he can see how everything will work together.



6 After deciding which reference shots he will use, Mattelson orders various exposures from light to dark. Light exposures help him see detail in the shadow areas that the eye normally picks up, but the camera does not. Dark exposures help him determine highlights. A print exposed at mid-range will give him information on local values.

7 After ordering the reference photos to the size they will appear in the painting, the artist cuts them apart and pastes his composition together. These references will be used to make a master outline drawing. He will also place these reference photographs into a projector at various stages of the painting and trace the details onto his board.

Rhodes, the posters have become an institution.

Explains Rhodes: "SVA has always seen its subway art as an appropriate visual convention by which the college could inform the public of its existence. Today, however, the posters have moved beyond institutional advertising to become an SVA contribution to public art, reminding thousands of daily commuters of the role which art plays in our lives."

As an SVA instructor for more than 15 years, Mattelson has not only intently watched the progression of these images over the years, he has contributed. A poster he created five years ago, featuring a zebra with colored stripes, has been one of SVA's most popular. Rhodes felt—and the artist concurred—that it was time for Mattelson to create another.

Faculty members who are given the assignment are asked to create an image that will illustrate or amplify a poignant phrase, in this case, "Even a great idea is only an idea until you make it real." It was written by Dee Ito, a copywriter who has had a long association with the school.

CONCEPTING

On the train ride home following his initial meeting with Rhodes, Mattelson began sketching. These initial drawings revolved around using light as a metaphor for ideas: light bouncing off the face of an artist sitting with a sketchbook, lightbulbs made of unfamiliar material and so on. (See Figure 1.)

Mattelson feels that the most intriguing ideas are derived from common images. "I always feel that the strongest solutions are based upon familiar images used in a totally new way. I like to work with something that is a cliché. I find that it yields the most exciting kind of solution. You have the familiarity of the cliché, and it reads as that. At the same time, you bring something fresh to it so you see it in a new way. I wanted to use the lightbulb to symbolize an idea. This was a real challenge because it has been done so many times. I felt compelled to find an innovative solution."

While doodling at the breakfast table the next morning, the concept of a "man as lightbulb" appeared, and Mattelson says it was exactly what he wanted—an unorthodox means of expressing the concept. (See Figure 2.) Instead of drawing the headless figure in modern clothing, Mattelson decided that since the Renais-

sance was the age of ideas, the separated body should be clothed in a costume of that era. He also thought a dark, dramatic sunrise would help symbolize the concept of "emerging ideas."

With the direction secure, Mattelson created a 5 x 8-inch color sketch, using a Pentel pen for the linework and Prismacolor and Caran D'Ache pencils for the color and values. Rhodes thought the concept was "brilliant" and approved the sketch. (See Figure 3.)

COSTUME In his search for period clothing, Mattelson visited a costume shop only to find most of the costumes too ornate; they would distract viewers from the focal points of the painting, the bulb and the socket. So he began researching the work of Renaissance artists and ultimately had a costume made from a painting by Hans Holbein (the younger) and several patterns found in a book on theatrical costumes. His plans included hiring a model to pose in the costume so he could take accurate reference photos.

Material was of the utmost importance because he wanted to juxtapose varying textures—metal, satin, velvet, lace, fur and skin—not only to give the painting impact but also to display his ability. The seamstress' fee for the jacket, blouse and white collar, including material, was $500. Although expensive, Mattelson felt there was no other way to achieve the effects he wanted.

REFERENCE PHOTOGRAPHY

As a graphic arts professional and teacher, Mattelson believes that illustrators do not pay enough attention to getting the right reference material with which to work. "Illustrators often use references with disparaging light sources, or take reference photos with different lenses, shot at different angles. It is like building a house on a bad foundation—you just create extra problems for yourself."

MODELS AND PROPS Like many other New York-based illustrators, Mattelson shoots reference photography at a studio owned by Robert Osonitsch. While many depend upon Osonitsch to shoot the photographs, Mattelson prefers to shoot his own and only rents space and equipment.

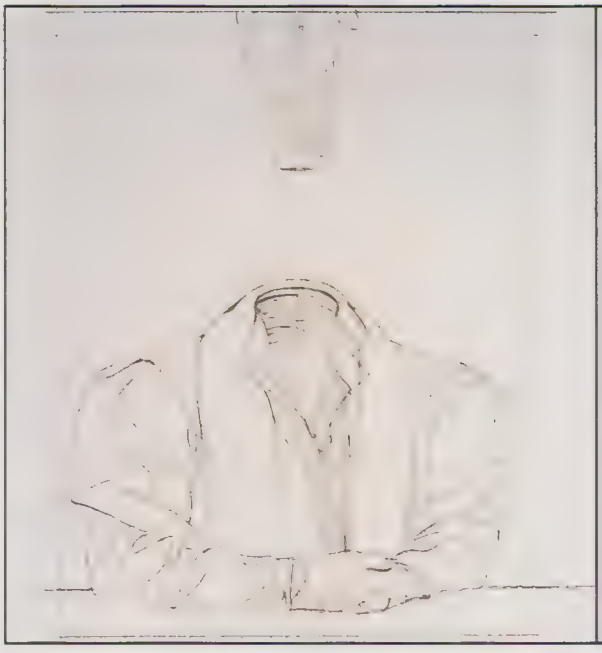
Although the artist owns a 35mm SLR, he rarely uses it because he prefers the details his 2¼-inch camera provides. An interchangeable back on the camera allows him to move freely from black-and-white to color film. He normally paints only from black-and-whites because of the detail that can be captured; but he also shoots 2¼-inch color transparencies to help him determine his palette.

For this assignment, Mattelson hired a male model from the Ford agency. The cost for the 90-minute session: $225 (plus 15 percent for the agency). After shooting five rolls of the model, he quickly shot three of the incidental props (lightbulb, socket and shirt collar). (See Figure 4.)

While shooting, Mattelson concentrates on parts of the image, rather than the whole. "I don't try to get everything in one shot. I may concentrate on the left arm or the right arm, making sure the folds are the way I want. Then, just to see how it all looks, I cut apart those different pieces from the contact sheets to make a mini-collage." (See Figure 5.)

SKY REFERENCE The artist says he searched through hundreds of slides of skies at a stock photo agency looking for a dawn reference. He never found it and decided to create his own sky based on the cloud forms in a slide of a sunset he liked. The rest of the sky was imaginary. "I knew in my head exactly the color feeling I wanted, so I just settled on cloud forms that had the feeling I was looking for."

TRACING AND DRAWING After editing the contact sheets, Mattelson had prints made in varying exposures, to the exact size they would appear in the painting. For example, he ordered an 11 x 14-inch print of the model in costume and a 3 x 4½-inch print

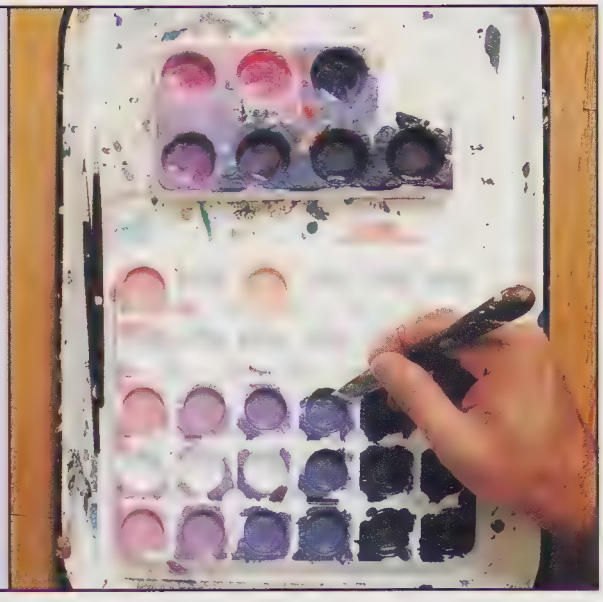


8 After tracing the main lines of his reference photos onto frosted acetate in the same size as the painting, 10½ x 16-inches, Mattelson taped the drawing to his board for positioning. This becomes his master drawing. When he needs details from his reference, he will project the photograph onto his board, line it up according to this master drawing and draw the details. The artist finds frosted acetate perfect for drawing over photographs because it takes pencil well and the photograph can easily be seen through it.

9 To determine the colors he would use in the sky, Mattelson painted a 2 x 3-inch thumbnail sketch (right). Later, he thought there would be too much space between the body and head, so when painting another thumbnail to determine the rest of the colors in the illustration, he made the composition less vertical (left).

10 Mattelson premixes his color (Lascaux) in value sequences using general proportions of 50 percent paint, 25 percent water and 25 percent gloss medium. A palette of seven colors was mixed for the sky.

11 Beginning with the sky, Mattelson traced the outline of the figure from his master drawing and painted the sky in the gradated tones he had previously mixed. He began with a No. 20 sable brush, but as the bands of color became narrower, he changed to smaller sable brushes. To achieve the tonal gradation with the quick-drying acrylic paint, Mattelson began at the top with the darkest color and drybrushed each lighter color into the one above it.



12 Once the gradation of the sky was established, the artist intermixed the seven colors he had used until there were 17. This was done by mixing the darkest color with the next value and so on. These new intermediate values will help him achieve a finer tonal gradation. Although this can also be accomplished with brushwork, Mattelson allows the paint values to determine the blending.

of the model's face. (See Figures 6 and 7.) He then traced the lines of the photographs onto frosted acetate in the same dimensions as the final painting, 10½ x 16 inches. The tracing, which Mattelson uses as a master drawing for placement, is taped onto his board. (See Figure 8.) When he needs to call up details from his reference, he will project the photograph onto the board, line it up according to this master drawing and draw in the details. Mattelson finds the frosted acetate perfect for drawing over photographs because it takes pencil well and because he can see through it easily when it is placed on top of the print.

PAINTING

Mattelson approaches painting in four stages: 1) Color thumbnails; 2) Laying in flat colors; 3) Blocking in or development; and 4) Rendering. At times, he may bypass a stage if he finds it easier to do so.

To determine the colors he would use in the gradation of the sky, Mattelson painted a 2 x 3-inch thumbnail sketch with acrylics. Later, when viewing it, he thought there was too much space between the body and head. So, when painting another thumbnail to determine the rest of the colors in the illustration, he shortened the length between the head and body, liked the results and decided to alter the design. (See Figure 9.)

Mattelson began with the sky because it is the largest area. "It goes along with my theory of relativity in painting, especially in color relationships: The larger areas affect the smaller areas," he explains. "Whenever you see a large color field, your eye automatically starts producing the complement of that color. In order to have something look like it is the right color, it has to be adjusted to the largest color area that surrounds it."

MIXING Mattelson mixed seven colors for the sky, which included Lascaux ultramarine blue, olive brown (comparable to an umber) and permanent violet deep for the dark areas. For the middle areas of the sky, he added permanent violet light and white. Permanent rose with cadmium orange and white were used to mix the lightest area of the sky. (See Figure 10.)

Beginning with the dark areas at the top, he painted the sky in the gradated tones he had established in the thumbnail sketch. He began with a No. 20 sable brush, but as the bands of color became narrower, he changed to smaller brushes.

(See Figure 11.) To achieve the tonal gradation with the quick-drying paint, Mattelson drybrushed each lighter color into the one above it. A hair dryer was used before applying each new layer of color to accelerate the drying time. In order to build up the opacity of the paint, he repeated this procedure three times until the choppy values were eliminated.

INTERMIXING Once the gradation in the sky was established, Mattelson intermixed the seven colors he used until there were 17. This was done by mixing the darkest color with the next value and so on. These new values will help him achieve a finer tonal gradation. (See Figure 12.)

"My purpose is to go over the sky one more time with all the intermediate values to get it smoother," says Mattelson. "Although this can be done with brushwork, I allow the paint to determine the blending. The smoother I want something to be, the more gradations I will make."

Once the final gradation was achieved, Mattelson painted the clouds with a No. 0 brush (Winsor & Newton Series 7). Although he was working from an 11 x 14-inch print of the reference slide, he painted freehand, without any pre-drawing. "It is the same technique I used for the broad areas of the sky, but I use a much smaller brush," he explains. (See Figure 13.)

COSTUME With the sky blocked in (he will add details later), Mattelson placed the drawing back into the projector and drew the shapes within the figure—the silk shirt, satin coat, velvet collar and neck socket. He then painted these areas in flat local colors. His palette for the shirt: Lascaux green light (a thalo color) and ultramarine blue. The flesh was made from yellow oxide (ochre) and permanent magenta. The coat and collar were mixed from ultramarine blue, olive brown and permanent violet. The socket is comprised of olive brown, yellow oxide and violet.

After these areas dried, he projected his reference onto the painting again and drew in the details with a white water soluble pencil (either Caran D'Ache or Staedtler). (See Figure 14.) The drawing will aid him in blocking in the form. It can easily be removed by painting over it or wiping it away with a tissue.

Mattelson's next step was to block in these same areas. This is what he considers an intermediate, form-establishing stage before adding details. This requires

(Continued on page 42)

13 With a No. 0 (Winsor & Newton Series 7), Mattelson established clouds. Although he was working from an 11 x 14-inch print of a reference slide, he painted freehand without any pre-drawing. He used the reference, which depicted a sunset instead of a sunrise, to help him decide upon cloud forms since he already knew the color feeling he wanted.

14 Mattelson placed the board back into his projector, drew in the shapes of the costume and painted them in flat local colors. He projected the reference back onto the painting and with a white water soluble pencil (either Caran D'Ache or Staedtler), he drew in the details. The pencil marks can be easily removed.

15 Next, he blocked in the clothing, an intermediate, form-establishing stage he completes before adding details. To develop the folds and pattern, he must paint over the entire area with several coats. As he builds opacity, he also adjusts the shadows and highlights within the folds.

TRANSPARENT ACRYLIC PAINTING

Different paintings require different strategies, says illustrator Marvin Mattelson. For example, unlike the light into dark approach over a flat, opaque base, as he demonstrates in the main article, Mattelson also builds up color transparently. He calls this approach "watercolor painting with acrylics," as it is characterized by building up washes to achieve an opaque base.

The artist reserves this technique for projects with light backgrounds. It involves several significant stages that include transparent block-in, opaque rough-in, advanced block-in and rendering. These steps are usually preceded by a detailed drawing executed directly on the board. Mattelson used this particular approach in an ad he created for Sandoz Pharmaceutical that appeared in a number of U.S. medical journals. Here is how he did it:

REFERENCE From five different reference photos he had taken using a professional hand model, Mattelson constructed a photo-collage that became a primary reference tool. "For effect, the client wanted the fingers positioned exactly as a comp artist had sketched it. This meant photographing each finger separately to match the anatomically incorrect drawing." (See Figure 1.)

SKETCHING Working from the collage and other reference photos shot at different exposures, Mattelson completed a pencil sketch on layout paper. (See Figure 2.) He then transferred the drawing to illustration board with a projector. Because the background for this illustration is white, Mattelson first prepared his illustration board with a coat of white acrylic paint to make sure he would have consistent whites in the finished work. When he blended the shadows into the white background, he did not want to worry about the color variations.

Using a 5H pencil, he transferred the drawing to the board. (See Figure 3.) Once the lines were in place and the shading indicated, Mattelson sealed the drawing (not the white background) with a thin layer of acrylic matte medium to keep the pencil line from mixing with the paints.

TRANSPARENT BLOCK-IN Using thin layers of paint mixed with water and medium, Mattelson began suggesting shape and color. There was no attempt to be accurate. "I am trying to put down a basic sense of what the colors are going to be; when I start mixing opaque colors, I will have something to relate to," explains the artist. (See Figure 4.)

OPAQUE ROUGH-IN Mattelson considers this stage the foundation upon which he will build the rest of the painting. Over the transparent colors, he blocked in

Figure 1 From five different reference photos he had taken using a professional hand model, Mattelson constructed a photo collage that became his primary reference tool.

Figure 3 After painting his board with white acrylic paint, Mattelson transferred his drawing to illustration board using a projector and a 5H pencil.

Figure 2 Working from the collage and other reference photos at different exposures, Mattelson completed a pencil sketch on layout paper to define his values.

Figure 4 In the transparent, watercolor stage, Mattelson uses thin layers of paint mixed with water and medium to suggest the basic color scheme of the illustration.

opaque colors (those mixed with white) to build form. (See Figure 5.) It is the artist's practice to mix a number of values for each color he will use. For the skin tones, these include local color, halftone, shadow and lights. No value changes were needed for the background red.

Because he sensed that the most difficult problem in this painting was to relate all the flesh tones and shadow color to the bright red in the background, he knew the solution was to "bring up" everything in the painting at the same time. So as he began the opaque block-in with the fingers, he was careful to work on the rolls of paper and shadows simultaneously.

Figure 5 In the block-in stage, Mattelson paints over his initial transparent washes with opaque paint. He considers this stage the foundation for the rest of the painting.

Figure 7 In what Mattelson calls the rendering stage, he makes slight color adjustments on the fingers, nails and rolls of paper, blending light into dark.

Figure 6 Mattelson is very concerned with "getting the right color and the right value in the right area" in this more advanced painting stage.

Figure 8 Once the basic rendering was complete, Mattelson added highlights to the fingernails and knuckles, then varnished the painting.

ADVANCED BLOCK-IN Rather than approximating color as he did in the rough block-in, Mattelson was concerned with accurately mixing colors at this very advanced stage—"getting the right color and the right value in the right area." (See Figure 6.)

After darkening the flesh tone shadows, he decided not to rough in the paper rolls and corresponding shadows, but to work toward a final rendering to save time. He felt it was important to keep the shadows soft so they did not distract from the important elements in the painting—he fingers and the rolls of paper.

Once the shadows were complete, the artist turned to the paper rolls, indicating first the gradual tonal variations before working on the frayed edges. When these areas were finished, he returned to the fingers.

RENDERING With his premixed skin tones, Mattelson made color adjustments to his rough block-in, blending the intermediate tones until the form was set. (See Figure 7.) He started with the darkest values and drybrushed the next lightest value to achieve a smooth rendering. He continued in this fashion until he worked his way to the lightest value. He then went back into the paper rolls to define the edges. He also added a cooler gray to the inside of the rolls to suggest reflected light. This added touch gave the painting more depth.

FINAL TOUCHES Once the basic rendering was complete, Mattelson began adding highlights to the fingernails and knuckles, blending carefully to suggest the soft, rounded forms of the fingers.

"Using the darkest value photo as reference, I made all the highlights a little bit lighter to give more of a feeling of depth. Adding a little cool color to the skin tone on the bottom of each finger also helps to add more volume." (See Figure 8.)

The final product, says Mattelson, "is a synthesis of a reality which can't exist, but that should look as though it does."

16 As he blocked in the blouse, Mattelson sensed that a change in strategy might move things along faster. Instead of completing the blocking-in stage, he decided it would be easier to go directly into rendering the blouse because of its intricate pattern and detail. "I built it up and rendered it in one shot instead of building it up and then going back into it," says the artist.

17 When working on detailed areas like the blouse, Mattelson often tapes his references directly to the painting so he can easily refer to them. Notice that he is using a light print to determine details in the shadow areas and a dark print to determine the shape and intensity of the highlights of the reflective satin material.

18 Mattelson followed this same basic procedure when painting the head and metallic surfaces: He first projected his reference onto the painting, drew in the outlines and painted the local colors in flat shapes. He then projected the references back onto the flat shapes, drew in the detail and blocked in these areas with paint.

(Continued from page 39)

painting over the flat shapes to develop all of the folds in the garments. As he built opacity, he also adjusted the shadows and highlights within the folds. Once these were complete, he developed the pattern on the green blouse. (See Figure 15.)

As each new color is laid down, he has to alter the relationship of one color to the next, which requires painting over these areas until the color is correct.

As he was blocking in the blouse, Mattelson sensed that a change in his normal painting strategy might move things along faster. "Because of the intricacy of the pattern, I decided that blocking it in was a waste of time and that rendering it from the beginning would be easier because I would only have to concentrate on each small area of pattern once rather than twice." (See Figure 16.)

When working on detailed areas like the blouse, Mattelson often tapes his references directly to the painting so he can refer to them easily. (See Figure 17.) It took Mattelson three days to complete the garment, which was the most time-consuming element of the painting.

HEAD AND SOCKET After he rendered the blouse, Mattelson projected the head, lightbulb and socket references onto his half-finished painting and drew in the forms in the same manner as he did the clothing. He then followed the same procedure of painting these areas in flat tones to establish the local color. Next, he drew in the forms and roughed in these areas by defining the basic shapes. This work included establishing the features and separating the light from shadow. (See Figure 18.) After painting the socket threads inside the neck, he felt the threads were angled too low. To solve the problem, he redrew, then repainted the area. (See Figure 19.)

TEXTURES

To paint realistically, Mattelson believes that artists must understand the physical phenomena of their subject matter. "Observation and analysis is the key to understanding," he says. "For example, study the highlights. Under general lighting, most highlights are pale, muted versions of the local color."

With satin or similar materials, the highlights tend to be brighter than the local color. The same thing holds true for velvet; the highlights are much brighter than the material of the coat and pick up much

more color. The color may be as bright as the satin but the highlights are not quite as high key.

Mattelson achieves smooth gradation of tone in these areas by drybrushing lighter color into darker color with thinned down paint and small brush strokes placed next to another.

Like satin, the metallic surfaces in this painting are very reflective. "The light source in the highlight of a gold ring will be the brightest color. That is exactly the principle used to paint the threads underneath the head and inside the shirt. I started out with the darkest areas and then gradually made everything lighter and brighter."

COLLAR Mattelson blocked in the shirt collar with a light tone of gray mixed with ultramarine blue, olive brown and a touch of purple. Once dry, he rendered the area with lighter tones of the same palette. The lacy pattern at the edge of the collar was painted directly over the black with two coats of opaque gray.

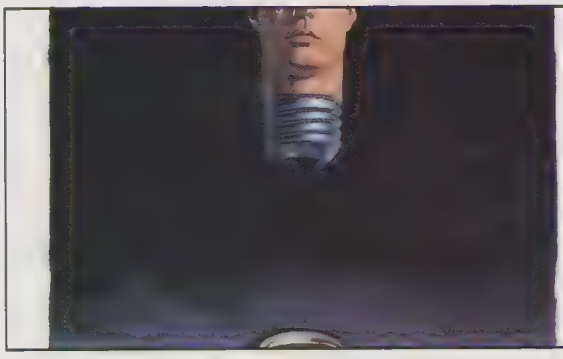
SKIN AND HANDS After blocking in the head, Mattelson worked into its lighter areas, changing the color to make the face appear lighter and less orange. (See Figure 20.) His palette for the light areas included permanent rose, yellow ochre and white. The shadow areas of the face were painted with oxide brown light and Lascaux green light, with touches of violet and blue.

To simulate the texture and pores of the skin, especially in the highlight areas, Mattelson paints with a stipple effect applied with a small brush in a slightly lighter tone than the rest of the face. He painted the hands using the same basic palette and procedure: by blocking in the shapes over the flat pattern of color, then rendering. The hands included a bit more pink, however. (See Figure 21.)

TROMPE L'OEIL MAT

Mattelson wavered between two different border treatments to accommodate the poster's type: extending the bottom of the illustration or creating a trompe l'oeil mat. His initial decision was to extend the bottom of the illustration where the figure's hands are resting on fur. (See Figure 22.) "After I did it I found I just didn't like the addition of all that space to the bottom. Also, I really liked the idea of separating the type from the image." Another factor in Mattelson's decision was that if the 29 x 44-inch poster was printed as a bleed,

19 After painting the socket threads inside the neck, the artist felt the threads were angled too low and decided to repaint the entire socket. Compare this new version with the preceding one to see how he shifted the angle slightly upward. To shoot the reference, he cut apart a socket and exposed the inside. Notice also how Mattelson has moved from the block-in stage to final rendering with the velvet jacket.

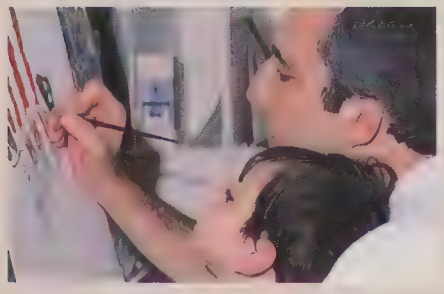


20 After the head was completely blocked in, Mattelson worked back into the light side to smooth out the rough value breaks. To simulate the texture and pores of the skin, Mattelson used a small brush with a stipple effect in a slightly lighter tone than the rest of the face.

21 The hands were painted using the same procedure: Mattelson first blocked in the shapes over the flat pattern of color, then rendered them. Compare this blocked-in version of the hands to the following photo which shows the rendering stage.

22 Mattelson wavered between two different background treatments for the area on which the type would be printed on the poster: extending the bottom of the illustration or creating a trompe l'oeil mat. His initial decision was to extend the bottom of the illustration.

FROM 'ZAP' TO LIFE-LIKE REALISM



Marvin Mattelson's career has taken a meandering path from television and comics to his present status as an illustrator specializing in tight, impeccably rendered paintings.

Those familiar with his work today may be surprised to learn that in the years following his graduation from the Philadelphia College of Art, he drew in a pointillist style and even "rode the Zap comic bandwagon." Before discovering painting, he got so tired of illustration that he even gave it up for awhile.

After a year, however, he discovered he missed drawing and returned. His first assignment, 16 realistic illustrations for an ad campaign, helped him forge a new style. "Although it was very different from what I had been doing, I accepted and suddenly had a whole new portfolio. I took those to *New York Magazine* and they gave me the movie review to do every week. It was a nice healthy push into a new direction."

These black-and-white, texturally oriented drawings began to look like miniature little paintings, prompting him to buy some paints. While experimenting, he got a call from a client at *National Lampoon* who needed a color piece. "I asked if I could do a painting, and they said sure. So I had two weeks to figure out how to do it. All I knew about painting was from a Wilson McLean lecture I had gone to in which he said that with acrylics, you paint light into dark. And that is what I did. As I did more paintings, the work kept getting more and more realistic, and after six months to a year of painting, I had pretty much defined what my style is today."

In time, work for other magazines such as *Psychology Today, Esquire, Oui, Playboy* and *Time* resulted. He also began to work for advertising clients, most recently British Petroleum, IBM and Union Carbide.

Teaching one afternoon a week at the School of Visual Arts also plays an important role in Mattelson's life. He believes it forces one to verbalize what is intuitive. He is also a firm believer that art school should teach technique rather than aesthetics. "I base my own teaching techniques on the polar opposite of what I was taught. I think it is much more important to teach basic technique—to help students understand how to manipulate mediums. Having a good technical base is something you go to school for. It would be like going to medical school and just being taught the philosophy of medicine."

Mattelson and his wife (and rep) Judy live in Great Neck, New York with their two sons. A former social worker, Judy reps three other artists as well. "I don't know if that kind of arrangement would be good for everyone, but I derive tremendous strength from our alliance," says Mattelson.

This year marks his 40th birthday, and he feels he has reached a new plateau in his painting—an ability to combine drama with adventurous color. These developments keep Mattelson stimulated in his career. "There is so much to learn with painting that it is impossible to get into a rut."

"Blood Run" Hardcover dust jacket for Zebra Books (Art Director: Mike Capobianco.)

"Dark Passage" Paperback book cover for New American Library (Art Director: George Cornell.)

Software Ad For Plus Development Software. (Agency: Anderson & Lembke; A.D.: Tom Roth.)

viewers may have thought that the top of the head was cut off in trimming.

"What I decided to do—and it is really what I wanted to do all along, but I was resisting the extra work—was to put a trompe l'oeil mat around it. If it sits in this mat, it is obvious that the head was cropped intentionally."

Mattelson painted the mat with a mixture of ultramarine blue, olive brown, violet and white. He then used a rule and a Caran D'Ache pencil to draw the edges. The light and dark areas of the beveled edge, which were painted with a 00 brush, give the illusion of three dimensions. (See Figure 23.)

FINE TUNING

Almost three weeks after he had begun, Mattelson was nearing completion. Once again, he went back to the clouds and broke up the dark gradation at the top of the painting with more cloud shapes. "I just felt the head was floating, and I wanted to throw a little tonal variation there to create a feeling of light and atmosphere." (See Figure 24.)

One of Mattelson's final tasks was to lighten up the highlights on the green blouse. After painting all the areas surrounding it, the artist felt he needed to make it stand out.

VARNISH A final step that should not be underestimated, Mattelson says, is to glaze the entire painting with acrylic gloss varnish—Lascaux in this case—which he thins 50-50 with water. "It enriches the darks and increases the contrast. The lights look lighter and the darks darker. It brightens up the color and really brings the painting to life." But if there is a chance that the client will ask for changes, as is often the case in advertising, he will not varnish the work until it is approved—because making corrections on top of the varnish is a time-consuming process.

After applying the varnish on this painting, Mattelson noticed that the horizontal line in the cloud area above the collar was too strong. "I wanted a softer entryway into the sky, so I had to go back into the painting, cut back the cloud shape and play with the gradation." Because the varnish changes the appearance of the painting, Mattelson is careful to apply varnish after each brush stroke to make sure the values and color relationships are correct.

A CREATIVE SEARCH

While some illustrators would say that elaborate reference-gathering and painting with painstaking attention to detail is too much trouble, Mattelson has no need to defend his approach. For him, capturing the way we see is a creative outlet, a means to keep himself challenged and a chance to solve the innumerable problems a realistic painter faces daily. "Every assignment is so different that I am constantly discovering new strategies, different color or textures. It is like planning a battle. You never know where the enemy is; you never know where the mishaps lay. But that is how you get better, by constantly challenging what is unknown." ■

—John Fennell

23 After extending the bottom of the board, Mattelson found he did not like the composition or the idea of printing type over a portion of the painting. So he decided to paint the trompe l'oeil mat, which would accommodate the type and make viewers aware that the cropped head was intentional. He painted the mat with a mixture of ultramarine blue, olive brown, violet and white. The light and dark areas of the beveled edge give the three-dimensional illusion.

24 As he neared completion, Mattelson broke up the dark gradation in the background with more cloud shapes. "I felt the head was just floating and I wanted to throw a little tonal variation to create a feeling of light and atmosphere," says the artist. Compare the new cloud shapes in the dark area with those in the preceding photograph.

Annual Reports in Hong Kong

Follow Hong Kong-based graphic designer Henry Steiner as he explains the cultural, language, scheduling and printing considerations for working in this Chinese printing mecca.

In Hong Kong, graphic design can be a schizophrenic business. On the one hand, it requires a knowledge of and sensitivity to traditional Chinese beliefs; on the other hand, it demands a thorough mastery of Western business practices.

Throughout his 27 years of practicing graphic design in this crossroads city, Henry Steiner has sorted through these seeming opposites and mastered both. As a result, he has established himself as one of the most noted designers in the region. Born in Austria but raised and educated in the United States, Steiner describes Asia as a fascinating design environment that presents him with images that give his work a distinctive flair.

"I don't try to have my design look exotic, but I will incorporate exotic elements," says the designer. "I live in a certain visual ecology and use the material from my surroundings. It is expected, and my clients appreciate that. What I have done, though, is use them differently. I may use a Swiss grid format and throw a Chinese image into that, which refreshes both elements."

Steiner estimates that of his firm's (Graphic Communication Ltd.) total output, 25 percent is annual reports; the remainder is corporate identity, general

publications (often for financial institutions), some book and magazine design, architectural graphics and a few posters. Among Steiner's clients are some of Hong Kong's most prestigious corporations and government agencies.

Although the level of design competence and sophistication has grown as dramatically as Hong Kong itself, Steiner says there is still some naiveté among his clients about what graphic design is.

"It is very strange that there is a combination of extreme financial sophistication and an ignorance of design and how you do that sort of thing. They just don't understand how printing presses work." But that attitude can have both drawbacks and benefits. "If you give a client something rather dramatic and experimental, they are not going to know it, and they are going to let you do it as long as it makes sense. And I relish that. As long as you can explain what you are doing and they have confidence in you, you can design as you see fit—as long as it communicates."

One of the more attractive aspects of practicing design in Hong Kong is that there is less emphasis on tightly planned schedules than in either the United States or Europe. "There are cutoff dates and you do have to stay on top of things and have meetings, but it's a much less rigid process," reports Steiner.

ANNUAL REPORTS

There can be considerable time constraints with some projects, though, and particularly annual reports. They follow a slightly more rigid pattern because by law they must be in the shareholders' hands 21 days before the annual general meeting. If that deadline is not met, the company is fined.

"Clients wait until the last minute. I told one client that next year, we are going to give them a loose leaf annual report. In many cases, they don't pay attention to the set text until they get the blueprint. One client didn't start careful reading until he got the finished annual report, then it had to be redone. The chairman of one corporation couldn't understand why the designer needed six weeks for production, when he could get a daily newspaper printed overnight!"

However, there is a greater sense of improvisation and flexibility, even among printers, than most designers in the West may be accustomed to. Steiner compares this schedule juggling to "tightrope walking" or "Chinese engineering."

Explains Steiner: "Chinese carpenters will use a piece of string and a sketch instead of elaborate shop drawings and measurement tools when fitting a set of shelves or a counter into a given space. They work directly and quickly, and the results are generally as satisfactory. It can look offhand, but it is responsive to the situation."

Although clients often delay and violate schedules, local suppliers are capable of making up for missed deadlines by shuffling their work load and putting on extra shifts. "That is the good part of Hong Kong's freewheeling, profit-motivated economy," says Steiner. (See "Printing in Hong Kong" within this article.)

MTRC's Annual Reports Steiner's firm, Graphic Communication, Ltd. of Hong Kong, designed the 1985, '86 and '87 annual reports for the Mass Transit Railway Corp. (MTRC), a quasi-governmental body that, among other functions, operates the city's subway system.

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Lead time for annual reports is short in Hong Kong: With a new client, it could be only two months. Minimum production time needed from start to finish is approximately six weeks. The short lead time is a result of the reluctance by many corporations to commit themselves too soon in print. If there is a sudden change in the marketplace, they want it reflected in their reports.

DESIGN PRACTICES IN HONG KONG

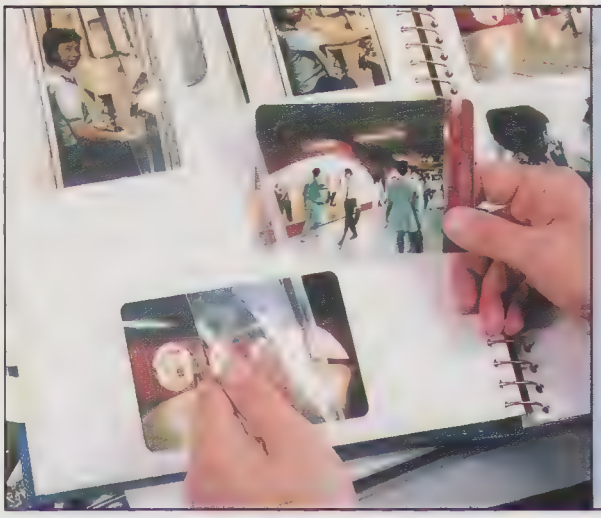
Over the years, Steiner has continued to use some design practices he was familiar with in the U.S. and Europe—and has learned to avoid others, especially when working for Chinese companies. Awareness of cultural traits is important and a factor in practicing design in Hong Kong.

"A lot of what one could say about working with the Chinese is cliché," says Steiner. "Be patient, keep a sense of humor, be polite, and so on. But there are two major problems which are sometimes difficult for Westerners to understand: The Chinese prefer to avoid awkward situations and will say 'yes' just to get rid of you—even if they know that's not the answer. There is also a concern with 'face,' which means they don't take to even honest criticism and would rather sacrifice a job than lose face."

CULTURE AND COLOR When working with color, Steiner often avoids combining blue and white together. While in North America and Europe, a blue background and white lettering might suggest strength or serenity, in China it is associated with death and funerals. (An exception is IBM, whose corporate colors are blue and white. The colors are tolerated because of the imported status of IBM products.)

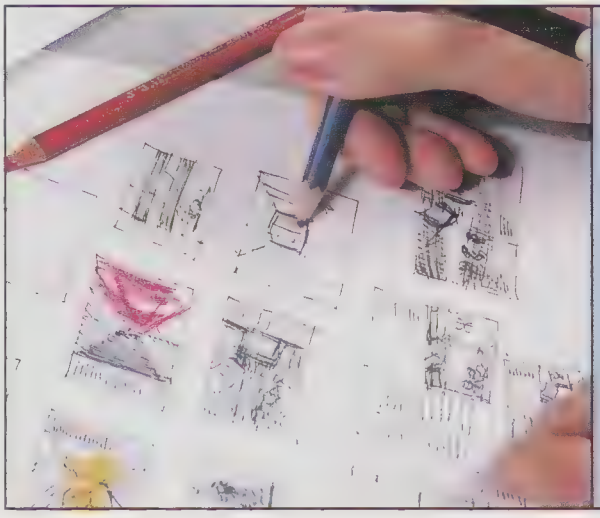
While a designer with a superficial knowledge of China might frequently use red and gold—traditional colors that represent luck—if taken too far, the colors can give a low-rent or old-fashioned association. The Chinese are indifferent to gray, and although they tolerate black because it is associated with fashionable imports, it is a color to be used with caution.

"Some of these conventions are thought out, others are knee-jerk," says Steiner. And there can be a conflict between the client's concerns and what the market needs. For instance, a bank has to look a bit Western. If a sophisticated image is called for, and all the client wants to use is red and gold, a designer can offer variations by substituting other metallic col-



1 Hong Kong photographer Neil Farrin was given a list of 25 locations within the MTRC system and for two days took shots of potential subject material for the 1987 annual report. He mounted the prints into photo albums for quick reference and presented the work to Steiner and MTRC officials. They selected ten images—eight finals and two alternates—that Farrin would shoot in earnest.

2 Farrin (far left) and designer Henry Steiner (left center) work with MTRC repairmen on location at 2:30 a.m. for one of the annual report photo spreads. Location shots such as this one in the subway had to be taken at night because the mechanics work from 1:30 a.m. to 5:30 a.m., when the electricity in the overhead lines is switched off.



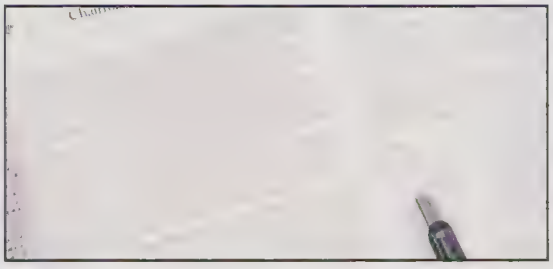
3 Working with the sample snapshots, Steiner and Associate Designer Victor Cheong, who was put in charge of the report's day-to-day activities, worked out thumbnail layout sketches for the report. Following meetings with MTRC officials, it was decided that the 1987 report should have a simpler layout of one photograph to a spread.

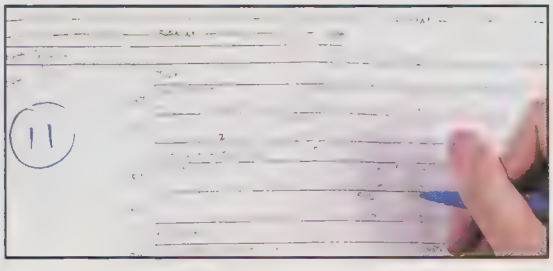
Photos by Marianne Barcellona

4 For determining visual layouts, Cheong favors a technique of cutting windows in the layout sketches. He then holds the windows over random magazine pictures to give him an idea of the impact that different compositions and colors will have on a given page.

5 Cheong pastes down a magazine photo in spread-size format to see if the ideas he developed at the thumbnail stage will work full size. He adds a red strip for visual impact. The designer also planned that all text and photos, including the front cover, would be placed at the same page height for visual continuity.

6 Using past reports, designers also began planning text layouts (above). Since no significant change was planned in either the number of pages in the annual report or the actual format, much of the effort was placed upon the visual formats. Designers also began marking up and ordering type, half in Chinese and half in English, for the report's 12 charts (below).





ors—silver, chrome, bronze and copper.

FORM In design, the Chinese generally prefer symmetry. However, for imported products or images, asymmetry is acceptable.

POLITICAL SIGNIFICANCES Of course, politics also enters into the design of any piece in Hong Kong. It is a given that designers must deal with two languages, but the way the Chinese text is laid out within a project can suggest political allegiance. For example, Chinese can be written horizontally from left to right or right to left. It can also be written vertically, from top to bottom, starting at the upper right, moving to the lower left.

"Until ten years ago, all of these variations had major political symbolic significance," explains Steiner. "Left to right was associated with Mainland (Communist) China; it is also the way Japanese is laid out. Right to left symbolized a Nationalist orientation (Taiwan). Fortunately, sensitivity to these symbols is less overt these days, and one usually sees either horizontal left to right or vertical right to left."

The Chinese characters present another problem. Hong Kong still uses traditional characters, while Mainland China uses the newer simplified characters. When speccing text for Chinese, either Chinese numbers (characters) or Arabic numbers can be used.

DUAL LANGUAGE PROBLEM Because of the dual languages, designers must find ways to design with two texts. Since Chinese is more condensed than English, one column of Chinese equals two columns in English in a visually equivalent type size. Chinese is much easier to spec than English since each word is one character. For example, a 90-word paragraph with nine characters to a line would equal 10 lines.

Bilingual reports can be treated in a number of ways:

1. One language can run from the front of the annual report to the middle, and the other language from the back to the middle. But this is wasteful because repetition of artwork often occurs.
2. Two separate annual reports can be prepared, each in a different language. Because of printing costs, this is an expensive alternative.
3. The entire annual report can be printed in English with a simple Chinese precis at the beginning of the brochure.
4. The Chinese and English texts can be laid out side by side. Running the texts in this fashion gives the image of separate but equal components. In the work pro-

filed here, Steiner chose this last option for economy and image considerations.

MASS TRANSIT ANNUAL REPORT

The 1987 annual report for Hong Kong's Mass Transit Railway Corporation (MTRC) was the third report Steiner's firm has produced for the government-owned company. Because the groundwork had already been established with the 1985 and 1986 reports, it was less a case of creating a new design than refining and updating ideas established in previous years. (See opening spread.)

Prior to 1985, MTRC produced its annual report in-house, reflecting the fact that the transit system was under construction and had been for the past eight years. Steiner's 1985 annual report marked the changeover from a construction to a consumer approach.

Since MTRC is a quasi-governmental body, technically only one copy of the annual report is necessary. However, as with many corporate annual reports, the publication has become MTRC's main public relations vehicle. Since the agency uses the document to secure financial support for new projects, it produced a slick, full color document similar to most major corporations. Of the 6,000 reports, 3,000 are distributed to members of the Legislative Council, senior civil servants, bankers and other business contacts. The remainder of the reports are distributed to visitors and used throughout the course of the year.

THEMES Each of the three MTRC reports Steiner's firm has completed has been designed with a different theme. In 1985, Steiner and the client chose the theme "Above and Below," which they illustrated with contrasting, paired photos shot by New York photographer Ken Haas. For the 1986 report, Haas shot images that emphasized crowds and motion for the theme, "Usage."

In July 1987, Steiner first met with MTRC's finance director, Roger Moss, its independent public relations consultant, Tony Turner, and several other representatives from the corporation to discuss the

PRINTING IN HONG KONG

On the whole, quality, reasonable prices and flexibility characterize Hong Kong's growing and diverse printing industry.

But Hong Kong is perhaps best known in the West as an economical book printer. "Hong Kong is good at economically producing case-bound, full-color books in medium runs (5,000 to 20,000), and prices are 25 to 50 percent less than in the United States," says graphic designer Henry Steiner.

One American publisher says he just received a quote from a Hong Kong printer for $4 per unit for a 112-page, 13 x 10¼-inch, full-color book. The package price for the 20,000 units includes everything—separations, door-to-door courier service for proofs, printing, insurance and delivery to docks around the world. He says bids by American printers would be considerably higher.

Hong Kong printers are flexible and can juggle production schedules, where U.S. printers are often locked into schedules for weeks at a time, adds Steiner.

Printing is reportedly Hong Kong's eighth largest industry, employing more than 32,000 people. And the demand is growing. This year, in fact, a printer Steiner frequently works with had to turn down several jobs because he was too busy. But most often, a designer's printing needs can be met. "Very few printers in Hong Kong turn down work; some double-book and things can get pretty tight; but in the end, everything usually gets done on time. We are probably more accustomed to chasing printers on schedules here. Hong Kong printers don't go in for senior client liaison account executives. Schedules are more flexible; if you miss your turn, you don't have to wait for several weeks before getting back into the queue."

Tight supervision is often the key to getting the best work, however. Steiner warns designers to beware of communications problems that can occur when dealing with Chinese printers: Take nothing for granted and check everything. Type could be backward—any-

Annual Report Cover Hong Kong Shanghai Banking Corporation's 1980 annual report.

Hong Kong Printing High quality printing, reasonable prices and flexibility characterize Hong Kong's printing industry. These examples of Steiner's previous work were all printed in the city.

upcoming annual report. The 1987 report had to be distributed in time for the April 20, 1988, meeting of the Hong Kong Legislative Council, a representative body dealing with matters of public interest. Unlike a larger corporation, MTRC does not hold an annual meeting. It is a public statutory body with one shareholder, the government.

The group looked at last year's report, discussed MTRC's direction for the year and chose several themes to present to C. Wilfrid Newton, MTRC's chairman. The theme, "Customer Service," was eventually chosen because it had been one of the railway's primary thrusts throughout the year. The basic form of the annual report—an 8½ x 11-inch, 60-page book based on a three-column grid (one column of Chinese and two columns of English) with photography as the primary means of visual communication—had been set over the past two years. Since the client wanted to continue with that format, primary discussions were held regarding the refinements that were needed. Steiner did no pre-planning for this meeting. Had MTRC been a new client, the number of pages and budget parameters would have also been discussed.

PHOTOGRAPHY VS. ILLUSTRATION Photography was again chosen as the main visual medium to maintain continuity between previous reports; and it was decided that only one photographer would be hired to maintain a consistent style. Although Steiner does not rule out the possibility of using illustration in annual reports, he says there are very few suitable illustrators working in the city. "Most of the many freelancers are skilled technicians—they are great with the airbrush—but they lack basic draftsmanship ability and expressiveness."

In contrast to previous years, Steiner and his client decided that simpler spreads in landscape format might be very effective for the 1987 report. "The plan was to make the layout simpler, with all inside pictures in one size and format. This would allow for more white space than thing is possible. For example, Steiner had a city skyline shot at night a few years ago. He and the photographer had taken great pains to shoot at dusk so the sky would be dark and the buildings and night lights visible. When he looked at the proofs, the sky was a beautiful pale blue. Dumbfounded, Steiner went to the printer and said, "Look at the sky!" The pleased printer nodded and said, "We make nice for you!" Steiner had to tactfully ask him to replace it.

"Chinese printers don't feel they're giving you your money's worth unless they give you a blue sky that's bluer than blue and lips redder than cherries," explains the designer. "You have to constantly tone them down, show them the C-prints to remind them of the color balance that you are seeking. Instructions have to be very explicit and double checked to assure comprehension."

PAPER All paper in Hong Kong is imported. Although most papers are either available from stock or easily imported, large quantities are more difficult to find. For this reason, designers must place orders well in advance of a press date—six weeks for paper from Japan, and 12 to 15 weeks for U.S. paper.

Although cover papers are available in small quantities (10 reams), all large quantities must be special ordered. Because of this problem, designers have learned to use more easily available paper. If a cover paper was not available in time, a designer may choose an alternate paper, spec a flat tone for texture, for instance, and use it instead.

U.S. paper is becoming increasingly popular in Hong Kong because of the drop in the dollar. "The Hong Kong dollar is pegged to the U.S. dollar; so now that Japanese papers have become exorbitant, even Japanese wholesalers in Hong Kong are importing American papers."

EQUIPMENT Electronic color scanning is state of the art in Hong Kong. But some publishers go to Singapore or Thailand for separations because of cost and quality, then print in Hong Kong. Presses are reasonably new, but dependent on the skilled technicians who monitor with their eyes. "Except huge runs, where one might go to Italy perhaps, for the most reasonable price, Hong Kong can provide for almost all of one's production needs," concludes Steiner.

Capability Brochure For Tony Petty and Associates, 1981.

Promotion Brochure Hong Kong Food Festival, completed for the Hong Kong Tourist Assoc.

had been practical in earlier years," explains Steiner. The designer also asked his client to name subjects they thought might make effective photographs.

In sharp contrast to the disciplined approach to subject material in years past, the designer suggested allowing the photographer to play with the images—in effect, take a looser approach.

Input on the report also came from Steiner's attendance at some of MTRC's regular Wednesday marketing/public relations meetings. Throughout the design process, Steiner maintains a dialogue with Moss and Turner. The MTRC chairman also took a keen interest in the progress of the report, and daily progress was monitored by Moss, with back up from Miranda Leung, MTRC's public relations manager. Moss was also directly involved in the photo selection and took his choices to the chairman for final approval.

During this meeting, the group also formulated a schedule that included deadlines for copy, photography, layout and printing. Once the direction of the report was set, Steiner put Associate Designer Victor Cheong (one of eight staff designers) in charge of day-to-day operations. Cheong is a graduate of Polytechnic of Hong Kong and has been with Steiner's firm for four years.

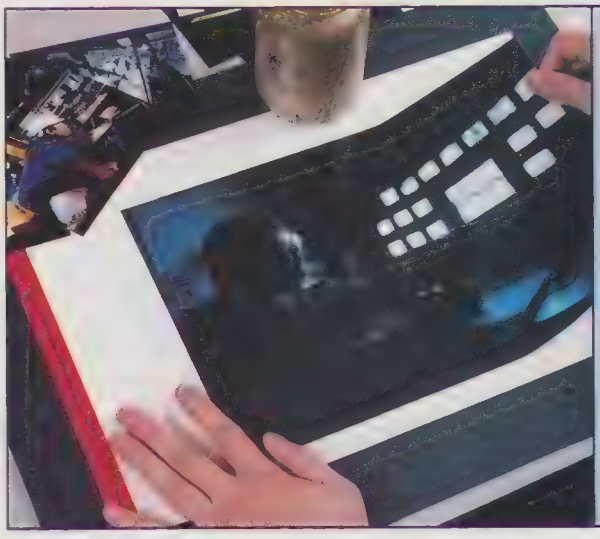
SELECTING A PHOTOGRAPHER

Of prime concern was the choice of a photographer, since he or she would be responsible for visually defining the report. Steiner submitted portfolios of four photographers with industrial experience, along with quotations for five days' work. Since MTRC officials were concerned about photography costs, they requested the work of local talent. Steiner, however, says that local fees are on par, and in some cases higher, than fees paid to U.S. or European photographers.

MTRC officials eventually chose Neil Farrin, a native of England who has been based in Hong Kong 11 years and specializes in corporate, advertising and travel photography. He also has his own library of stock photos. This was his first major project with Steiner's firm.

"Neil's work had a good grasp of the corporate look essential for the type of report we envisaged, and MTRC officials were impressed with his professionally-printed color portfolio," says Steiner. "From experience, I also know that Neil has a pleas-

7 When Farrin's 35mm transparencies were processed, Steiner and Cheong, working with the photographer, chose the best shots and ordered C-prints made to layout size. These are useful for presenting to the client as well as for the separator's reference.



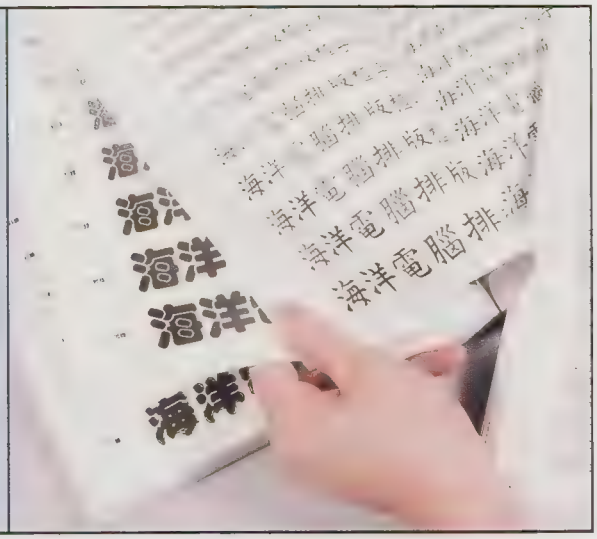
8 The C-prints were pasted down onto dummy spreads, along with the red bar, which added visual continuity and anchored the page. Ten full-size C-prints were made for the presentation to MTRC officials. In addition, eight 4 x 5 C-prints were made and offered as alternatives.

9 MTRC officials had only one complaint regarding the photos: The shot illustrating the shopping boutiques located in one of the railway stations did not have enough people in it (left). The client requested that it be reshot with more passersby (right).

10 To reflect the theme of "Customer Service," a photo of a staff member manning an information booth was chosen for the cover. Steiner executed several color thumbnail sketches to determine the cover design. The red border, a pleasant contrast to the pale gray, is added to the left of the cover for continuity and interest.

11 Once the pictures were approved, they were reduced on a black-and-white photocopier and a flow chart indicating the content of each page was created. The length of text is an estimate based on previous reports. As in past years, the book is 60 pages long.

12 There are only three text typefaces available in Chinese (two of which are shown here): "Black," which corresponds to a sans serif (bottom); "Kai Shu," a classic cursive letterform and Steiner's choice for the annual report (top); and "Sung," which is constructed like Bodoni.



ant, unflappable manner and a warmth in dealing with his subjects, which communicates in his pictures."

SCOUTING LOCATIONS Farrin was given a list of approximately 25 locations within the MTRC system where photos could be shot. For two days, he took snapshots of potential subject material for the report. He then mounted the color prints into photo albums for quick reference. (See Figure 1.) From the snapshots, MTRC officials selected 10 images—eight for definite use and two backups.

ON LOCATION With ample cooperation from MTRC, Steiner and Farrin went on location for the photo shoots. When models were needed for the selected locations, they relied upon MTRC employees. Shots such as the "Repair in Tunnel" had to be done at 2:30 a.m. because mechanics who do the repairs work in non-operational hours, from 1:30 to 5:30 a.m. (See Figure 2.) All of Farrin's work was completed within 10 days.

LAYOUTS

Working with the sample snapshots, Steiner and Associate Designer Cheong worked out thumbnail sketches for the layouts. (See Figure 3.) For laying out visuals, Cheong favors a technique of cutting windows in the layout sketches and holding them over random magazine pictures. This gives him an idea of the impact that different compositions and colors will have on a page. Using a variety of visuals, the designers also began planning text layout. (See Figures 4, 5 and 6.)

The three-column grid works well for the reports since one column of Chinese equals two columns of English. The designers also planned that all text and photos, including the front cover would be placed at the same page height for visual continuity. "The grid also makes life a lot easier in terms of knowing where everything is going to be placed within the report," says Steiner.

From Farrin's processed transparencies, Steiner and Cheong selected the best photos and had C-prints made to layout size. (See Figure 7.) In the layouts, Steiner sought a spacious look surrounded by white, using the full 35mm frame. A red bar was added to the left side of the picture spreads to hold the eye, anchor the page and add interest. Red is a very acceptable—even lucky—color to the Chinese. Similarly, a thin black holding

line was placed around each color photo to give precision and demarcation. (See Figure 8.)

The chromes were pasted down onto layout boards. Ten spreads were submitted to MTRC with the knowledge that two would be eliminated. Since the photos were not text specific, the spreads could be placed anywhere in the report.

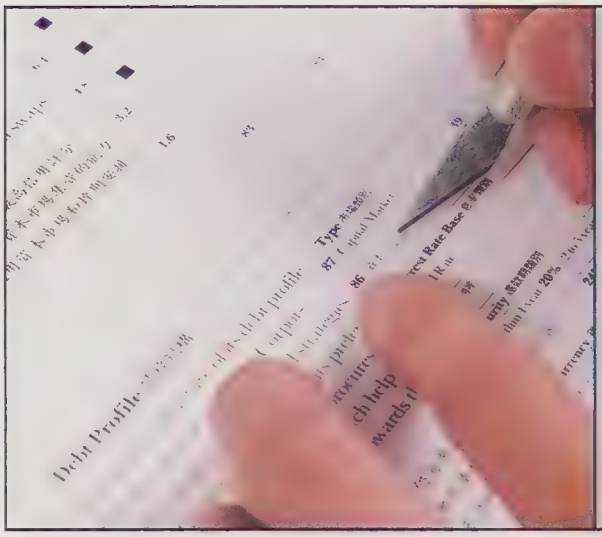
MTRC officials had only one complaint: The shot illustrating the shopping boutiques in one of the stations did not have enough people in it. The client requested that it be reshot with more passersby. (See Figure 9.)

COVER To reflect the theme of "Customer Service," a photo of a staff member manning an information booth was chosen for the cover. Steiner executed several color thumbnail sketches to determine the cover design. A red bar was also planned for the cover. It aligns with the red on the photo spreads and is a pleasant contrast to the pale gray background cover. (See Figure 10.) Although several other ideas were considered for the cover—brightly colored "collars" (workshop signs) indicating what work was to be done on railway cars in the depot, and a shot looking along turnstyles to make a perspective pattern broken up by one passenger—the portrait seemed to best represent the customer theme.

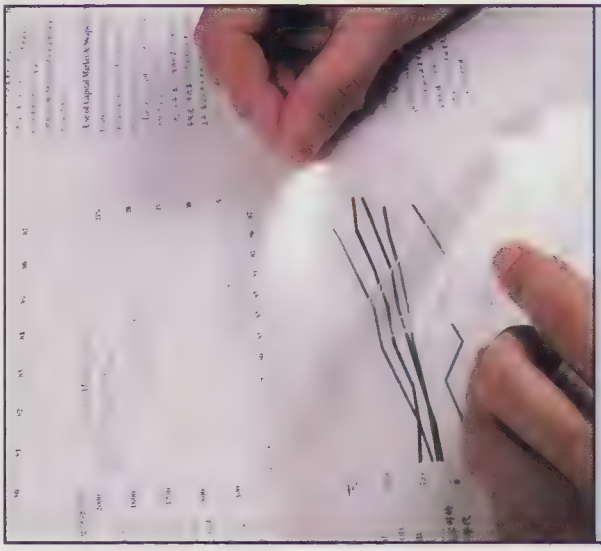
FLOW CHART AND DUMMY Once the pictures were approved, flow charts were created and approved for the layout. (See Figure 11.) Following this plan, the designers made a dummy to show the client the proposed layout and disposition of the subjects. This was done primarily to show the client the simpler format was feasible. After the dummy was approved, some modifications were made to it, but it was never considered a working document. While the report was in progress, manuscripts, proofs, galleys and visual references were stored in plastic albums, one pocket for each page.

TYPE

The text copy was written in English and translated into Chinese by MTRC with the help of its independent public relations consultant. The marked up galleys and pasteups were sent to two different typesetters, one for the English text, the other for the Chinese characters. "Different type houses have different specialties," says Steiner. "Even in the same type shop, there might be two completely different

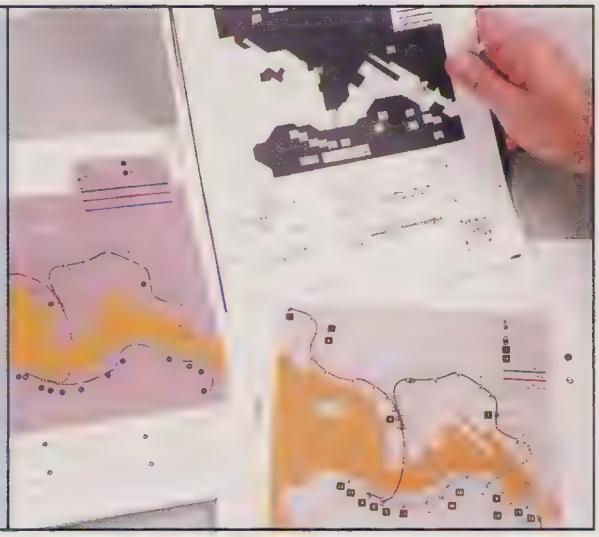


13 To create the charts, type was ordered in the required face and point size, and secured to final boards with wax. Chart making was a joint venture between the design staff and Roger Moss, MTRC's finance director, who takes a special interest in this phase. Ideas and statistics for the charts were faxed back and forth between the two offices.



14 Several different kinds of charts were used in the annual report, all utilizing acetate overlays over type. Here, Cheong checks the registration on the three acetate overlays needed for this line chart.

15 To maintain a visual continuity with previous annual reports, MTRC officials wanted to use similar, but lighter colors than were used in previous reports. The two primary colors for the charts, yellow and gray, were printed as flat colors instead of screened. The gray was also used as background color for the cover and for the 18-page back-of-the-book accounts section.



16 Although the basic form of the subway map remained the same, it had to be updated with indications of new depots and station numbers. MTRC provided the updated information and Steiner and Cheong specified the lighter colors and stylized the shape of the map from previous reports. The primary colors of the map were the same as those used in the charts, with the addition of red, blue and green to indicate the routes.

17 At least two sets of proofs were needed for the annual report. At proof stage, white horizontal lines were added to the background of the cover and to the red color bars on the cover and inside pages to add visual texture. In addition, because the lines are placed at the same intervals throughout the book, they give a feeling of precision and speed.

18 Retouching was also needed, particularly on the cover photo, where the gap between the collar and the knot of the tie was closed. In addition, spots and stray hairs were removed. The designers also requested a darker background on the cover photo; but when they received the second proofs, the face of the subject had turned dark. The proof was sent back once again so the separator could adjust the color balance.

systems for setting English and Chinese type. We used the best systems from two shops, combining the proofs at artwork stage. The type was set to the same leading, although the Chinese system doesn't measure leading according to point sizes. Instead, it uses the metric system."

Steiner says that when he first came to Hong Kong, printing was primitive and the range of typefaces in Roman and Chinese was restricted. "This brought out a talent for improvisation and a preference for the challenge of working with a limited technical palette. The best of Asian art, it seems to me, has always involved lavish effort and frugal means."

Baskerville, the same typeface used in previous annual reports, was again chosen for its not-too-aggressively industrial look. To capture a refined look, Bodoni was chosen for the headlines. Steiner felt that the cursive look of the Chinese text also works well with the English typefaces chosen.

CHINESE TYPE In Chinese, there are three basic typefaces for text type: "Black," which corresponds to a sans serif and can be compared to Futura; "Sung," which is constructed like Bodoni with thick and thin strokes; and "Kai Shu," a classic cursive letterform like Garamond, also called "Regular." Kai Shu is based on a style of Chinese calligraphy and was Steiner's choice for the report. Recently, it has also become possible to italicize, condense and extend Chinese type. (See Figure 12.)

CHARTS

Creating charts and graphs is often one of the most difficult and time-consuming aspects of the annual report process. Since this is the third report Steiner has produced for MTRC, many of the problems had been worked out. In fact, of the 12 charts in the 1987 report, nine take on the same form as the 1986 publication. The charts were keylined traditionally with acetate overlays. Color was indicated on tracing paper overlays. "Outside of some down-to-the-wire alterations to the colored graphs, there were no real production rough spots," says Steiner.

MTRC's Moss has a lively personal interest in the charts and works directly with the designers in making them as clear, concise and as visually interesting as possible. (See Figures 13, 14 and 15.)

Much of the sketch-exchange process was handled via the fax machine. In Hong Kong, the fax is employed more often than

PIONEER IN THE CROSSROADS CITY

"I never had any particular interest in Asia," says Henry Steiner. "I liked Japanese art—but if anyone would have told me years ago that I would spend most of my life in Hong Kong, I would have said, 'Where is that?' "

For the past 27 years, Steiner has watched Hong Kong develop into a major financial capital, and through his work has helped some of the major corporations who make their home in this "crossroads of Asia" visually communicate their images to the rest of the world.

Although he was born in Vienna, Steiner grew up in New York and studied fine art at Hunter College. The designer says he lacked the vocation for painting and decided to enter the master's program in graphic design at Yale, where he studied with Paul Rand, Josef Albers and others. After graduation, he worked in advertising for a short time before he was awarded a Fulbright Scholarship to study at the Sorbonne in Paris. When he returned to New York several years later, he found the city somewhat artificial compared to the "more organic" European cities he rediscovered in his travels.

Ripe for a challenge, he accepted an offer to go to Hong Kong to work for nine months as design director for *The Asia Magazine*. The nine months became two years, during which time he became interested in corporate identity work. In 1964, he started his own company, Graphic Communication, Ltd., with one secretary and two assistants. He now has 15 people on staff—eight designers and seven others who handle managerial or administrative duties.

Steiner says his breakthrough came in 1966 with an annual report for the Hong Kong Bank, the first of 18 annual reports he has created for that organization. Since that time he has completed more than 100 annual reports. Steiner's many clients include *Far Eastern Economic Review*, the Hong Kong Hilton, Hong Kong Telephone, IBM, and the Hong Kong Tourist Association.

Despite its gleaming skyline and new subway system, Steiner says deep down Hong Kong is still a third world city. Fees are also considerably lower than in New York and designers are often at the mercy of their clients, who at times exploit the business weaknesses of many designers. Despite these seeming drawbacks, Steiner says a talented, organized designer can still do very well in the city.

Graphic Communication, Ltd. Henry Steiner (left) and Associate Designer Victor Cheong check over the proofs for the 1987 Mass Transit Railway Annual Report.

But Steiner finds that maintaining creative standards is more difficult in Hong Kong than in New York. "I seem to spend a lot of time struggling with clients, suppliers and even staff to get work out at even a basic level of competence." Although the creative level has improved consistently since he has been in Hong Kong, Steiner believes it could be better.

To maintain high quality work, Steiner pits himself against international graphic design standards. "I don't particularly worry about what is happening in Hong Kong. I feel very much involved in competing against the standards of New York or London—to make to the best of my ability, something that could work in either of those cities. And the greater the creative challenge, the more I enjoy it."

Steiner's environment deeply affects the look of his work. "At first, my work disseminated the attitudes then current in New York and New Haven. Later, I decided to embrace the 'exotic' visual vocabulary of Asia. By analyzing and respecting it, I have been able to restore to what had seemed quaint Oriental visual clichés a dignity and conviction."

Massimo Vignelli has said that he found it difficult to place Steiner's designs within a time framework. Steiner says he must agree with Vignelli's estimation, and says that the timeless nature of his work is a direct result of being removed from the pressure of the constant change—"the flavor of the month typeface mentality"—that can happen in a city like New York. "That was also a goal instilled in me by Paul Rand—not being superficially fashionable, but letting the concept take you through to a logical solution."

Steiner's firm is one of several medium-sized design offices (with staffs of between six and 20) in Hong Kong. Within the city, there are also innumerable individual freelancers. Steiner offers a rough estimate that there are between 800 and 1,000 graphic arts professionals in the city. They maintain a liaison through several graphic design organizations which include the 300-member, locally-based Hong Kong Designers Association, of which Steiner was a cofounder; and the 400-member Hong Kong chapter of the Chartered Society of Designers, which is headquartered in London.

At times, Steiner says he feels professionally isolated in Asia, though he keeps in touch with other parts of the world through his frequent travels. In fact, he says he may have a greater awareness of design throughout the world than many of his colleagues because of living outside the mainstream. He is active in many other graphic arts organizations, including the American Institute of Graphic Arts and the Alliance Graphique Internationale. He is also called upon to judge the work of other designers and is a frequent speaker at design seminars outside of Hong Kong.

Steiner is still excited by the pioneering spirit he finds in the city—the feeling of working on the design frontier of the third world. And unless some force pulls him in another direction, that is where he will remain.

in the U.S. because there is a flat annual payment, thus telephone calls are unlimited. As a result, the fax is often used in lieu of a messenger service.

To maintain a visual continuity with previous annual reports, MTRC officials requested similar colors with the exception of a lighter gray. The gray, along with yellow, the other primary chart color, was printed as a flat color. The gray was also used as background color for the cover and for the 18-page, back-of-the-book accounts section.

UPDATED MAP Although the basic form of the subway map remained the same, it had to be updated with indications of new depots and station numbers. MTRC provided the information, and Steiner and Cheong changed colors and stylized the shape of the map from previous years. (See Figure 16.) The primary colors of the map were the same as those used on the charts, with the addition of red, blue and green to indicate routes.

PROOFS

The designers required two sets of proofs for the book. In Hong Kong, machine proofing on a small press is the most common system. Turnaround time is anywhere from four days to a week. In this case, random color proofs and page proofs were provided by the same house. The proofs were checked against the chromes, and color corrections were indicated. (See Figure 17.) Second proofs were checked thoroughly to verify that changes were made; the designers then requested slight color modifications. In some cases, as with the video monitor picture, four sets of proofs were made.

Some retouching was also needed, particularly on the cover photo, where the gap between the collar and the knot of the tie needed to be closed. In addition, spots and stray hairs were removed. The designers also requested a darker background on the cover photo; but when they received the second proof, the face of the subject had turned red and dark. The proof was sent back once again so the separator could adjust the color balance. (See Figures 18 and 19.)

Finally, blueprints of the type were checked for accuracy. Although it is expensive to make any changes at this point—none were needed in this case—they can be made in an emergency.

PRINTING

Six thousand, 60-page reports were printed by Toppan Printing of Hong Kong, a branch of the famous Japanese company. Three 16-page forms and one 12-page form were required. (See Figure 20.)

PAPER Steiner chose the Japanese-made, White Glossart (comparable to KromeKote by Champion) for the cover and Kanzaki Topcote MC (machine coated) paper, 157 (grams per square meter) for the text (comparable to Ikonolux). Each book required four sheets of stock, plus the cover. In all, 48 reams of paper (500 sheets to the ream) were needed.

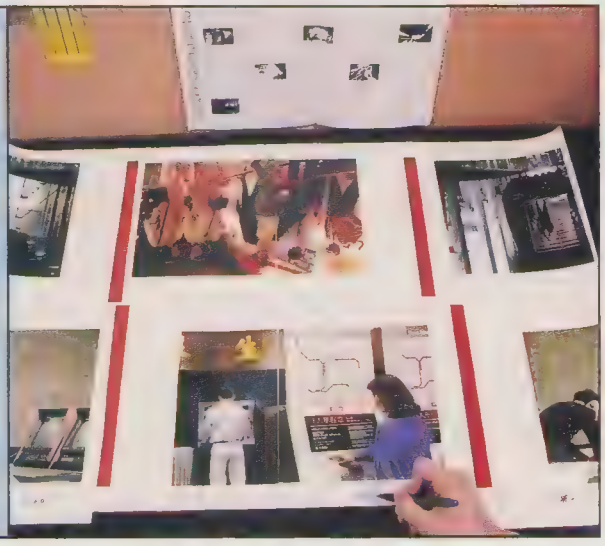
THREAD SEWN BINDING The cover was laminated at a separate location. It was then glued to the spine. The report has a square back and was thread sewn instead of perfect bound. Careful attention was taken with binding because it is a document of record and is used extensively in presentations to banks and government bodies around the world. "Thread sewing is more durable; it allows the book to lie flat when opened without pages dropping out or the spine cracking," explains Steiner. "Also, in Hong Kong, perfect binding is often imperfect."

Other than high praise from Roger Moss, Steiner says there has been very little comment on the annual report—which is a very good sign. "Silence is usually the best approbation a designer can aspire to in Hong Kong; that usually means that the client loves it." ■

—John Fennell with Marianne Barcellona

19 A difficult shot in MTRC's security room required four proofs. Initially, the shot was difficult because it required a light exposure to highlight the dim interior and a darker exposure to get the correct lighting on the monitor screens. To solve the problem, the separations from the light and dark exposures were stripped together.

20 Three 16-page and one 12-page form were used in the report, as shown in this color imposition sheet. Six thousand copies of the report were printed. The cover was laminated at a separate location, then glued to the spine. Because it would be used extensively, the report was thread sewn so it would be durable and lie flat.



Packaging in the Computer Age

How JS Mandle & Co. creates a Chiquita ice cream bar package on a Mac II-based system.

By Donna Iannelli

If JS Mandle & Co., Inc. could bottle and sell their packaging process, the label would read "New and Improved." Especially since they discovered some very special "ingredients" to complete their package designs 20 to 40 percent faster than they did using traditional methods.

The brainchild of Jim Mandle, founder and president of the Paramus, N.J.-based marketing communications and design firm, and Janet Umland, the firm's creative director, the Macintosh II-based design system is called PEGAtech (Proprietary Electronic Graphic Arts Technology) and its role in the firm's operations is to enhance speed, productivity and creativity by enabling designers to take a broader and more comprehensive approach to designing packages.

CONFIGURING A SYSTEM

Just two years after Mandle established his own firm, he knew there had to be a better and quicker way to design packaging. So he and Umland, then a senior designer, began researching computer systems and software.

Rather than begin with their own needs, the designers identified their clients' needs first. Then they spent almost a year researching hardware and software availability by studying the computer publications and attending conferences and trade shows like the Pratt Conference on Computer Graphics, MacWorld, and the NCGA.

"That was the most time-consuming part of the process. We went to every trade show and to many showrooms. We tested both high-end equipment like the Contex and Lightspeed and low-end equipment like Macintoshes and PCs. Then we evaluated each system by comparing its strengths and weaknesses as it specifically applied to package design,"

The Final Package JS Mandle & Co., Inc.'s proprietary, Macintosh II-based design system, PEGAtech, enhanced the speed, productivity and creativity of the firm's staff as they produced this new ice cream bar packaging.

Photos by Edward L. Taylor

Umland recalls.

They needed a system that could bridge the gap between design and production of mechanicals. And the answer was a flexible, expandable system, one that did not rely on one manufacturer. "If we were to purchase an entire system from one manufacturer, we knew when we wanted something more, we would be reliant on one firm. That's when we knew we needed to start looking at Mac-based systems and all the parts that could interconnect."

With their own customized system, they found they could take it as far as they wanted. "I can call up software developers and I can have whatever program I need written up for me. It remains within our control." Umland stresses the firm's commitment to future growth and service: "We knew if we configured our own system, we could control our own destiny. Maybe it wouldn't do everything, but it would be in the best interest of our company and our clients."

With a firm Mac-based direction established, Mandle and Umland continued the research and reading. "We had to make sure everybody could connect, that every computer application would be compatible. We didn't want IBM on one end, and Hewlett Packard and Compaq on the other," Umland says.

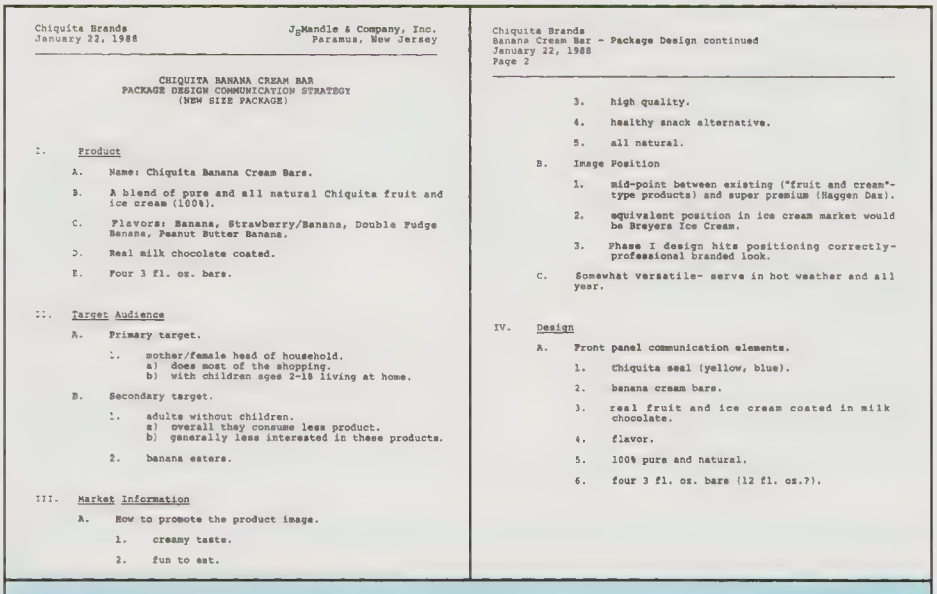
EXPANDABLE CONFIGURATION Today, that package design system includes a Mac II design workstation at every designer's desk, and a mix-and-match configuration of available hardware, such as scanners, a 300 dpi laser printer, a color thermal printer (QMS ColorScript 100) for color comps and available software, such as Adobe Illustrator, Quark Express, MacPaint and several other paint programs—plus several custom-made proprietary applications. The firm uses an outside service for Linotronic output on an L300.

"Because there is no package design software for the Macintosh yet, we simply developed it ourselves," says Umland. All the computers network together via a central unit which stores the information on a hard drive. Using varied software applications, designers can select and create graphic elements, typography and color. The images can then be manipulated with either a mouse or a tablet to create their designs which ultimately evolve into digitally produced, camera-ready artwork. Digital production completely eliminates the laborious paste-up process.

In all, it took them one year of research and four months to get this system up and running.

BOTTOM LINE Prior to automated package design, changes in a packaging project were costly to the client and time-consuming for the designer. "The advent of automation in the package-design industry gets products to the market with a shorter lead time and improves the quality of the package," says Mandle. "This is especially appealing to a client who wants to stay ahead of the competition."

For example, market trends might indicate that a heavy, masculine-looking label, long associated with a certain brand of beer, is outdated. Marketing research might show that the label should be redesigned to appeal to a more upscale audience, including women. A designer could present the client with several sketches using thinly-ruled lines to create a sleek, contemporary look. However, since thin lines tend to be perceived as feminine, the designer would have to experiment with several thicknesses of lines that would graphically communicate the client's marketing objectives without looking altogether feminine. Using the au-



Chiquita Brands
January 22, 1988

J$_B$Mandle & Company, Inc.
Paramus, New Jersey

CHIQUITA BANANA CREAM BAR
PACKAGE DESIGN COMMUNICATION STRATEGY
(NEW SIZE PACKAGE)

I. Product
- A. Name: Chiquita Banana Cream Bars.
- B. A blend of pure and all natural Chiquita fruit and ice cream (100%).
- C. Flavors: Banana, Strawberry/Banana, Double Fudge Banana, Peanut Butter Banana.
- D. Real milk chocolate coated.
- E. Four 3 fl. oz. bars.

II. Target Audience
- A. Primary target.
  - 1. mother/female head of household.
    - a) does most of the shopping.
    - b) with children ages 2-18 living at home.
- B. Secondary target.
  - 1. adults without children.
    - a) overall they consume less product.
    - b) generally less interested in these products.
  - 2. banana eaters.

III. Market Information
- A. How to promote the product image.
  - 1. creamy taste.
  - 2. fun to eat.

Chiquita Brands
Banana Cream Bar - Package Design continued
January 22, 1988
Page 2

- 3. high quality.
- 4. healthy snack alternative.
- 5. all natural.

B. Image Position
- 1. mid-point between existing ("fruit and cream"-type products) and super premium (Haggen Daz).
- 2. equivalent position in ice cream market would be Breyers Ice Cream.
- 3. Phase I design hits positioning correctly-professional branded look.

C. Somewhat versatile- serve in hot weather and all year.

IV. Design
- A. Front panel communication elements.
  - 1. Chiquita seal (yellow, blue).
  - 2. banana cream bars.
  - 3. real fruit and ice cream coated in milk chocolate.
  - 4. flavor.
  - 5. 100% pure and natural.
  - 6. four 3 fl. oz. bars (12 fl. oz.?).

1 After representatives from Chiquita presented the marketing brief for the new ice cream bar, designers at JS Mandle & Co. developed their own objectives for the packaging. Four flavors were proposed and key attributes were "all natural," "fun" and "creamy." The primary target audience: female head of household. The secondary target: people who regularly eat bananas and adults without children.

tomated system, a designer could refine lines right on the screen. The computer would eliminate the tedium of ruling lines by hand. Design exploration could be done in a matter of minutes, as opposed to days or even weeks.

The system's ability to digitally store information also reduces the time needed to retrieve artwork and change a mechanical. For example, years after a line of canned vegetables has been on the market, the client may want to remove the word "salt" from the list of ingredients and add a disclaimer to the label stating that the contents have "No Salt Added." Traditionally, the designer would have to get the original mechanical from the printer, spec the type for the new design, add it to the old artwork, send the new mechanical to the client for approval and then send it back to the printer.

Using the computer, the designer calls up the original design from its memory. The word "salt" can easily be deleted from the list of ingredients and the computer will automatically change the leading. There is no need to have the type reset. PEGAtech's ability to scale elements to within 1/250-inch or a quarter of a point, says Mandle, allows for precise positioning of the new type, as well as creative control.

2 During the brainstorming session, owner Jim Mandle and Creative Director Janet Umland assembled the entire design staff for a brainstorming session. Word association and other verbal and visual idea generators aided discussion. The strongest concepts were roughed out in marker.

3 This more developed marker sketch communicates the most important design elements: the blue and yellow Chiquita seal, the bar's name, real fruit and cream coated in milk chocolate and 100 percent natural.

4 Once basic marketing objectives had been studied, some elements were scanned into the computer for manipulation and initial design exploration. Here, the Chiquita logo is entered by Janet Umland, eliminating unnecessary rework. Once the elements are part of the system, they no longer need to be re-input.

CHIQUITA ICE CREAM BAR

Two days before Christmas, 1987, a representative from Chiquita Brands, Inc. management contacted JS Mandle & Co., Inc. about a project. "We're in a tough spot," he said. "We have a small project we think you can help us with." Chiquita was looking for a very quick turnaround at a reasonable cost, and the design firm came highly recommended within the company.

On December 28, the representative met with the design firm and gave a marketing presentation on a new, all-natural ice cream bar. The main objective was to enter the premium ice cream market. The bar would be targeted to families and marketed as a healthy snack for children and a novelty dessert for adults.

"We wanted this new product to be consistent with our current products in the novelty category. Because it was a banana-based product, we wanted it to capture some of the design equities that are associated with our sticker," the representative states. Several months prior to contacting the design firm, the company's marketing group had created a concept statement and concept boards, which were tested in focus groups. Actual product testing and thorough research were conducted as well, all with a close look at flavors, shapes and price.

The bar would be introduced in a limited geographical area beginning in June, so the client had to move quickly and requested that JS Mandle & Co., Inc. deliver the first round of designs just ten days after the initial meeting. The designers were given samples of the product to try, as well as the results from the research on the target market and conditions in the retail base.

PHASE I: RESEARCH Since computers have yet to be able to study the competition, perform a store audit and check the lighting conditions at the point of purchase, the design firm had to conduct its own preliminary research before sitting down to design. In their research, they carefully studied the various competitive products and the shelf environment.

"We reviewed the marketing objectives and the supporting stats, and then we put in writing what the graphic communications objectives of the project were, basically what our interpretation of the marketing objectives were," recalls Umland. This interpretation involved translating product attributes like health and appetite-appeal into graphic strategies like picturing the product on the face panel. (See Figure 1.)

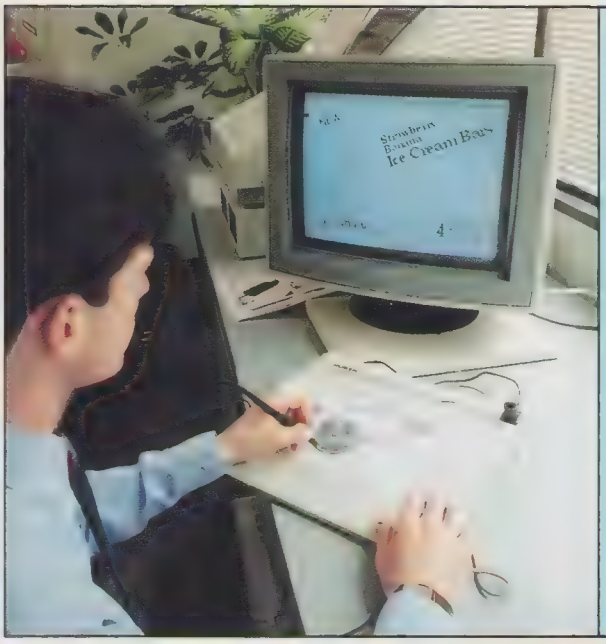
Once the client approved these written objectives, the firm's five designers held a team brainstorming session to verbally express what solutions might work. Methods such as word association and later sketching with pen on paper helped facilitate discussion. Those visual concepts that the entire group found the strongest were then pursued.

PHASE 2: SKETCHES The first batch of sketches were narrowed down to 20 concepts, which were refined to a semi-tight pencil stage on tissue paper. This group was then narrowed down to five or six tight sketches. (See Figures 2 and 3.)

The strongest ones were quickly input for further exploration on the computer. All the elements, including Chiquita's logo, the ingredients, the net weight statement and the flavor designations, were scanned into the computer. PEGAtech converted the electronic input into a template. (See Figure 4.)

Using the computer screen as a board, the designers manipulated the images with a mouse or a tablet. No cutting and pasting was involved, and no stats were shot either. PEGAtech electronically enlarged and decreased the size of the design elements and positioned the figures on the screen. (See Figure 5.) When printed on the laser printer, the result was a clean, tight comp that enabled the designer and the client to check the impact and legibility of the design before color was added.

"We took those six finals, developed them, reviewed them with the client and ultimately chose one solid direction," notes Umland. The winning direction at this stage was an ice cream bar in the shape of a banana.

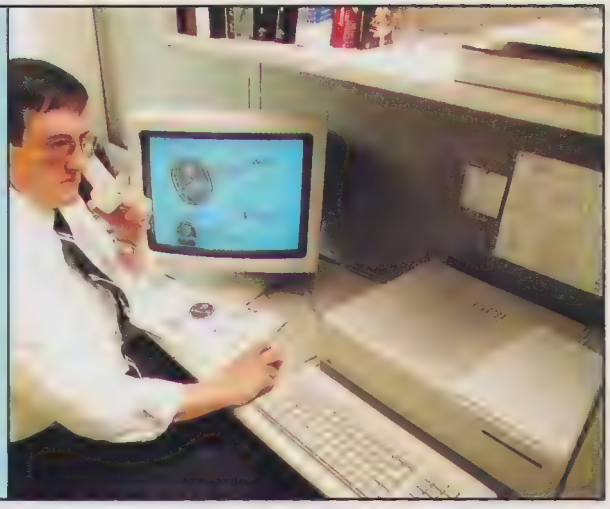


5 Designer Tim Showalter used his tablet to explore creative possibilities. In conjunction with the mouse, he was able to not only perform simple maintenance tasks of rotating or expanding blocks of type, but to explore many positioning options. When printed on the laser printer, his work resulted in a clean, tight comp that enabled the designer and the client to check the impact and legibility of the design before color was added.

6 Color is added to the black-and-white design in the preview mode and color prints are run on the QMS ColorScript 100 thermal printer. This color comp was used to review the initial design concept.

7 A color print of the product was pasted onto a mocked-up box, and Chiquita's management used this prototype to sell the concept of the product. The design highlights the strong identity of the colors yellow and blue, with the logo displayed as large as possible.

8 After the initial design had been prototyped and approved, Chiquita's research suggested different flavors and a different bar shape. Designers had five weeks to fit the square design into a rectangle. With the computer, Production Director Chuck Flynn takes instructions from Chiquita on copy and determined quickly that the changes would require repositioning of elements.



9 These black-and-white laser prints demonstrate the kinds of modifications in the logo and the package's size and shape that ensued. Later, Chiquita's legal department placed restrictions on the use of the logo and designers explored new treatments. Such modifications would have caused large production setbacks using traditional package design methods; but PEGAtech allowed designers to fit new specifications in easily.

10 The final color study was done only after design direction was finalized so as not to confuse the impact of the package components. Paul Nolan, designer, explores color here not only on the screen but through the color output on a QMS color printer.

COLOR PHASE One detail with which designers took great care was how to convey flavors. Initially, they began with four flavors and that number was later reduced to just two, banana and strawberry banana. But the package itself, designers knew, would have to rely on the bright yellow Chiquita identity and the large blue Chiquita logo.

"So we went back and forth to identify color—through color bands, color fields, color photographs. We reviewed three or four different approaches and worked closely with the client on color direction," says Umland. The design ultimately did highlight the strong quality identity through the colors blue and yellow, with the logo displayed as large as possible to meet objectives.

Color is added in the preview mode, and the QMS color printer produces a full-color comp, so that Chiquita was able to see what the package looked like with a color prototype before the actual boxes were made. (See Figure 6.) The preview mode is also useful for testing a product's impact in the market since the design can be looked at in a variety of colors. PEGAtech's ability to "paint" right on the computer screen makes marker comps a thing of the past.

"After the color solution is viewed on screen, and the color print is approved, it is made into a mocked-up box and lined up next to the competition," says Umland of the firm's mock-up process. (See Figure 7.) Chiquita's management used the full-color prototype to sell the concept of the product, and on January 11, JS Mandle & Co., Inc.'s final concept was approved. (The deadline was March 1.)

CHANGE IN BAR SHAPE When the approval came, what would have traditionally been the mechanical was nearly complete—and designers were ahead of schedule. It was at this juncture, though, that Chiquita's market research suggested different flavors and a modification in the shape of the bar.

"The shape change had more to do with the packaging equipment in the plant than anything else. So it had to be resized to better utilize existing packaging equipment," says the Chiquita representative.

The expense of new packaging molds would have to be passed on to the consumer, and Chiquita needed to remain within a certain price range. It was also determined that secondary sell copy would have to be added. So the design was re-examined and redefined to meet the

client's new objectives. With only five weeks left, the firm was faced with the challenge of making a square design fit into a rectangular space.

Using traditional methods of package design, such enhancements would have caused quite a setback, but PEGAtech's ability to scale the elements enabled the designers to fit the existing design into the new dimensions. (See Figures 8 and 9.)

After multiple refinements and presentations to the client, Chiquita approved the new design. (See Figures 10 and 11.) But just a month before the deadline, when the package design was in the final stages, another major revision arose. A restriction was placed on the use of the logo by Chiquita's legal department.

Back at the computer, more exploration ensued to utilize the size of the logo within the legal guidelines. The final design was revised to meet the package specifications and legal requirements for the use of the logo. Chiquita gave the go-ahead to complete the project. (See Figures 12 and 13.)

FINAL 'MECHANICALS'

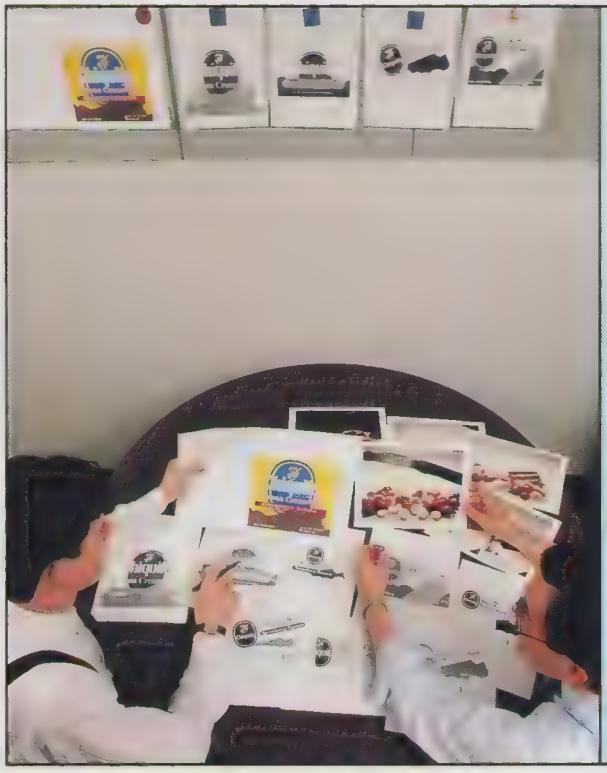
Once the sell copy was typed and positioned on the back of the package design, product codes, die lines, bleed lines, glue flaps and other information was entered into the system. The digital information was transported to the Linotronic (L300) via a modem, and the black-and-white art for reproduction was back in the designers' hands in a matter of hours.

But Mandle and Umland's vision does not stop here. They know that one day they will be able to transport imagery, and not just black-and-white, from the computer to a digital press, without platemaking. "It's not unheard of. We've seen it with the Iris color printer that is currently being interfaced with the Scitex prepress systems. Until there is the data storage that can support a PC-based system's color output, it won't be realistic for the average designer to output color for reproduction," says Umland.

And as competition for consumer product companies continues to intensify in the next three to five years, there is little doubt that independent design firms who have not yet computerized will be forced to examine utilizing some form of computer technology to ensure the competitive edge. ■

Donna Iannelli is a freelance writer based in New Jersey.

11 Once color decisions were made, Chuck Flynn and Janet Umland studied their effect on the overall package. The computer system allowed designers to color output that eliminates the laborious task of testing color decisions on all panels.



12 Test shots of the product were integrated with final design direction to ensure compatibility. Chuck Flynn then reviewed the positioning requirement with Designer Tim Showalter. The final design called for a product descriptor centered on the main panel, placing some restriction on the photo layout. Through PEGAtech, however, the designer had already planned for this. A few minor positioning changes were made at this stage after test photography confirmed the most favorable direction.

13 This final color print was used as the final comp. Once approved, it would be wrapped around a box with actual photography pasted in. A photo of this 3-D comp was taken and delivered to the client for final approval.

SIOUX·CITY

ART·CENTER

FIFTIETH · ANNIVERSARY

David L. Goines: Artist as Printer

Follow David Lance Goines as he designs and prints the Sioux City Art Center poster using solid color and split fountain techniques.

Musical instruments change imperceptibly into cornstalks. Ears of corn metamorphose into paintbrushes. Tassels become brushstrokes.

Just as René Magritte and Marcel Duchamp delighted in this kind of playful juxtaposition between words and images, so too does Berkeley, Calif.-based poster designer, cameraman, stripper, platemaker, ink mixer, printer and businessman David Lance Goines.

"As a poster designer, the juxtaposition of word and image is central, and I bend every effort to make them work together, to stimulate the mind and eye of the observer," says Goines of his passion for the visual pun.

Like a word pun, a visual pun says more than one thing at a time—and for this reason, it is a tool on which Goines frequently relies: "It can say in an image what might otherwise be a tiresome diatribe. The spiked flatiron by Man Ray and fur-lined teacup by Meret Oppenheim both are utterly disturbing, yet humorous in the best tradition of the visual pun."

Goines demonstrates his deft use of visual puns in the following feature documenting his Sioux City Art Center project, as well as his methods for printing the poster, using finely tuned solid color lithography and split fountain techniques.

THE PROJECT DEFINED

More than ten years ago, Goines was contacted by the San Francisco Symphony to produce a poster. The expense of the project was underwritten by a benefactor, Margaret Seamster Everist, and when she moved to Sioux City, Iowa, she once again commissioned Goines, in late 1987, this time to create a poster to promote the Sioux City Art Center.

CLIENT DIRECTION The function of the poster was to promote public awareness of the Sioux City Art Center, to increase membership and participation, as well as to stimulate a sense of civic pride in the arts, which had at one time glowed more brightly in the public eye.

Everist's sole suggestion was that the design convey an element of humor. And, as it turned out, after Goines sent her the small (19.7cm x 27.1cm) watercolor sketch of his chosen design, it was met with enthusiastic approval; she suggested no modifications.

SIZE The maximum sheet size of Goines' press, an ATF Solna Chief, is 18 x 24-inches and this turned out to be an ideal final printed size for this kind of poster, which was meant to be displayed in small indoor spaces. Although such relatively small dimensions would be swallowed up on the walls of a subway or cavernous hotel lobby, they are just right for the more modest dimensions of a private home, office or small public area.

EXPLORING VISUAL THEMES

Although some ideas do occasionally come to Goines in a flash of inspiration, more often than not it is a lengthy process—on average, 100 hours of thinking per poster—characterized by many notes and thumbnail sketches until the images begin to jell. (Goines spends as many hours thinking as he does printing.)

"It is more a matter of slowly, painfully grinding along until a glimmer of a workable thought gives me an opening. From this seed, I hope to grow an entire tree," says Goines.

In this case, Goines reports that he

Benefit Poster Artist and craftsman David Lance Goines designed and printed this 12-color, 18 x 24-inch poster on his ATF Solna Chief. The final pass of gold foil stamping was completed by Marier Engraving in San Francisco, as Goines does not house a Kluge press in his Berkeley, Calif. shop.

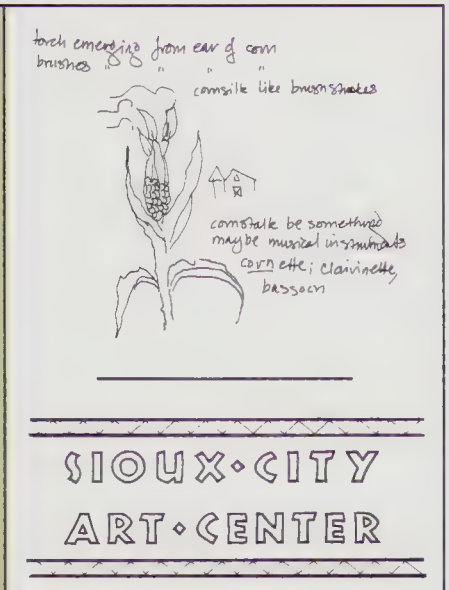
thought less about art and more about Iowa. Whenever a thought struck him, he would jot it down. Words like "corn," "farming," "windmills," and "farmhouses," led to names like "Grant Wood" and "Sioux Indians," and images like the shape of an ear of corn with its tassels of silk. This connection eventually stimulated the most compelling direction for Goines: brushes emerging from an ear of corn.

The artist explains it as a process by which the ear of corn transmogrifies into paintbrushes, the tassels becoming brushstrokes. "I made a tiny sketch of this idea, alongside of which I jotted: 'Cornstalk should be something. Maybe musical instruments—cornet, bassoon, clarinet.' And then the whole entertaining idea of a series of visual puns started to work for me," continues Goines.

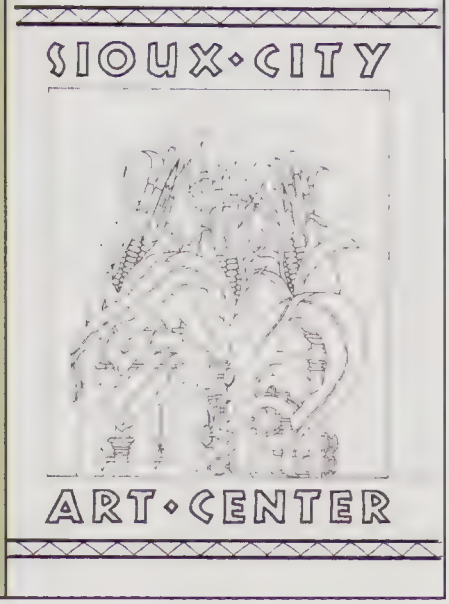
THE SKETCHING PROCESS There are two reasons why the artist seems to prefer working with postage stamp-sized original sketches (which he then works out in color on photocopied sheets of preliminary artwork at about six to eight inches high). (See Figure 1.)

"First, only a small amount of time and effort has been invested in a small drawing. It is therefore easy to reject, modify or fiddle around with. If the investment is too large, you sometimes become ena-

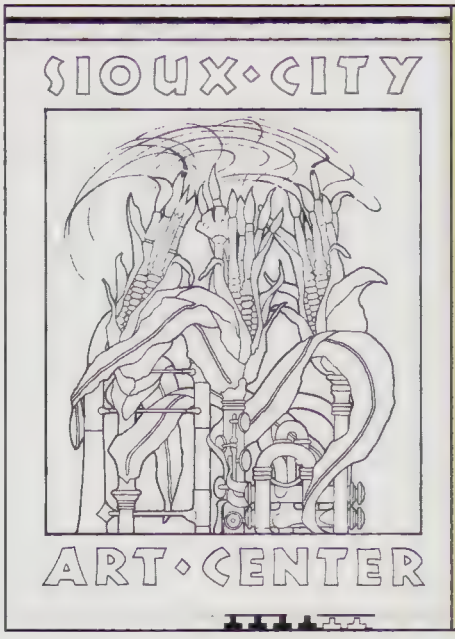
1 Goines sketches small and writes phrases like "torch emerging from ear of corn," "brushes emerging from ear of corn," "cornsilk like brushstrokes." Through word association, he begins to solve the poster problem in the pages of his 4 x 6-inch sketchbook. Using a reference book featuring the Rudolf Koch typeface, Neuland, Goines then draws the letters freehand.



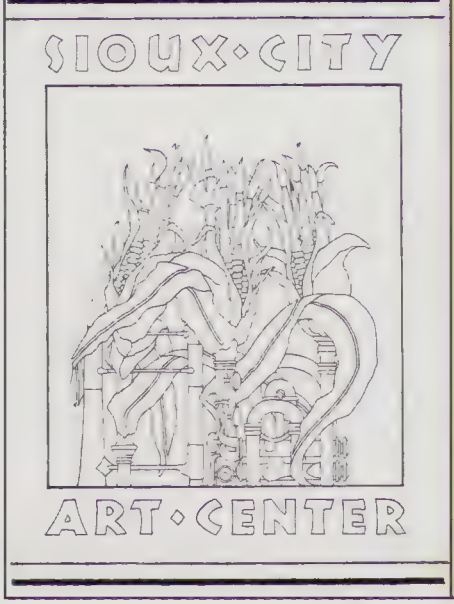
2 Once he is satisfied with the lettering, he enlarges it, and tapes it to his preliminary sketch, which he has inked with his Rotring technical pen on Clearprint drafting paper. The size of this sketch is roughly 8⅝ x 6⅛-inches.



3 Using a .18 technical pen nib, he draws the final sketch by assembling the type and image onto a single, clean sheet of drafting paper which measures $11^{15}/_{16}$ x 8⅝-inches. Goines' black-and-white art resembles a page from a child's coloring book—not much to look at by itself but it shows where everything will go.



4 The final keyline art is inked on Strathmore two-ply Artist's Drawing paper, with the smaller lettering pasted in separately. After shooting the art in camera, Goines made a black-and-white copy to use as a base for coloring a final color sketch for client approval.



mored of the drawing simply because it took such a long time. A careful, polished sketch creates much the same pitfall; you tend to fall in love with it, even if it isn't appropriate or very good. Plus, you can make a lot of little sketches in a short time, creating a flow of ideas out of which—it is to be hoped—at least one will be of use," says Goines.

"Second," he continues, "posters, signs, and billboards are usually designed up close and viewed from a distance. If they are designed full size or larger, design decisions will be made on the basis of head motions rather than small eye movements. When the image is seen at viewing distance, as opposed to working distance, it may look imbalanced or clumsy. If the design is done at working distance, but at viewing size, this problem will not arise. The work will be more harmonious and intelligible, having neither excessive detail that turns into mud nor lines that are too weak."

RULE OF THUMB Goines offers this rule of thumb: One-and-one-half inches sketch height, at a working distance of 18 inches, equals two feet of finished poster height at a viewing distance of 25 feet. Thus, a design sketch of one-and-one-half inches height will lead to a clear, easily understood poster, sign or billboard two feet tall at a 25-foot distance, four feet tall at a 50-foot distance, eight feet tall at 100 feet, and so on.

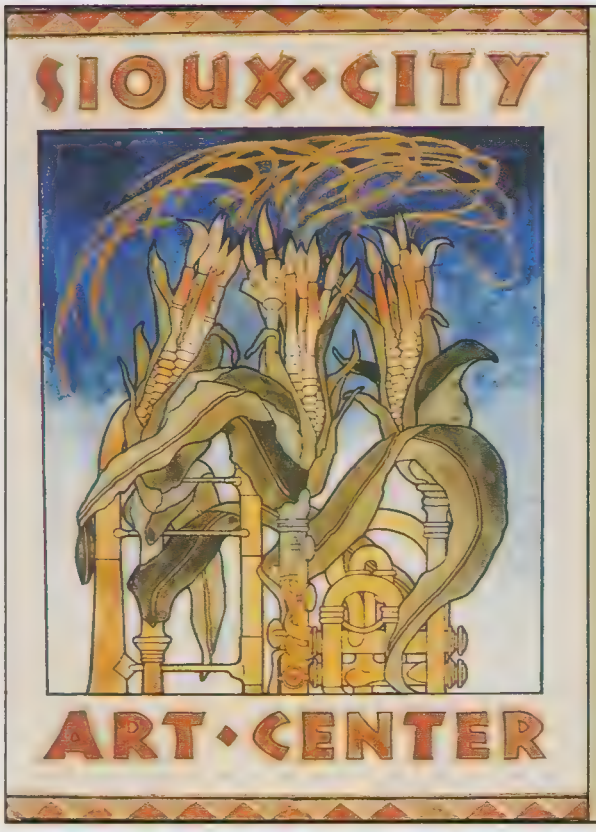
CREATING THE 'KEYLINE'

Having settled on the basic idea, Goines first made a number of separate drawings of each element—first done in pencil on Clearprint drafting paper and then inked over with his Rotring .18 technical pen—until he had a set that was in scale and of the same general line quality.

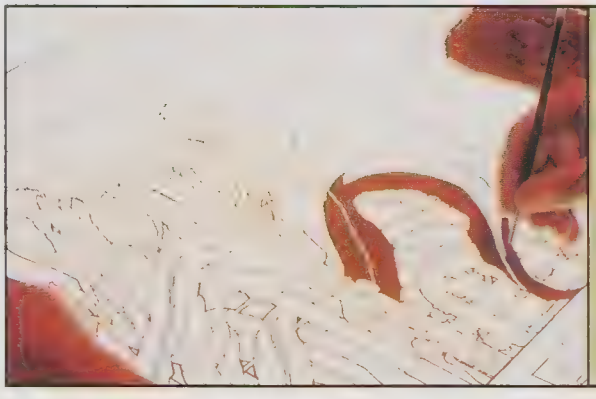
LETTERING In keeping with the American Indian feeling, Goines chose a typeface called Neuland, which was designed by Rudolph Koch in the late 1920s, for use as reference.

"The face was not entirely compatible, especially as far as line quality and weight went, so I lettered it by hand, freely modifying some of the letters—particularly the 'R,' " says Goines. (Refer to Figure 1.)

His first sketch was rough, but when he was satisfied, he would be ready to enlarge the words on the copier and tape them to the preliminary sketch. (See Figure 2.)



5 Working in Blockx watercolor and Designer's gouache, the artist creates the 19.7 x 27.1 cm. color sketch to send to the Sioux City Art Center for approval. He favors complementary color schemes and in this instance, the colors followed a naturalistic theme. It was met with great enthusiasm and no modifications were suggested. In the darkroom, the keyline art is photographed and enlarged to final poster size. The image was shot in two parts and stripped together on the light table, since the largest negative the artist's camera can produce is a 14 x 20-inches.



6 Once positives for each color are made from the negatives, Goines paints with opaque inside the areas corresponding to the given colors in the keyline so they will be opaque to light when separation negatives are shot for each color. The area he is painting here will ultimately be green.

7 The importance of opaque white to Goines' printing process cannot be understated. And he routinely begins all of his posters with the lightest color first: "The minute particles in opaque white scatter the light, creating a softer appearance and the illusion of greater density."

Photos by Franklin Avery

"In general, I feel that hand lettering is superior to type in this sort of application. With posters, the type and art are often at some variance, giving the feeling that the words were sort of tacked on as an annoying afterthought. You get the feeling that the words spoil a nice illustration. With most advertising, of course, the words are an integral part of the image, and it is of the utmost importance that they seamlessly reinforce the image. With hand lettering, the line will inevitably partake of the same quality as the drawing, and words and picture will be seen as a whole," he says.

The slow, contemplative process of hand lettering also gives him time to mull over the details of the design.

ASSEMBLING THE FINAL He then assembled the drawing by tracing it onto a single piece of drafting paper. (See Figure 3.) From this final sketch, he inked the final image onto a clean sheet of Strathmore 400 Artist's Drawing Paper but this time incorporating the smaller lettering ("fiftieth anniversary"), which had been inked separately at approximately finished size. (See Figure 4.) He built up the line with many small strokes using his .18 nib, rather than drawing a single clean line with a drafting pen. This gave the line a pleasing "accidental" quality and kept it rough. The finished art measures 12 x 7¼-inches.

A sheet that goes through the press as many times as Goines' work ultimately must, is susceptible to distortion, rendering conventional register marks useless. For this reason, Goines incorporates the keyline into the first color down and registers all subsequent colors to it as the printing progresses.

COLOR PALETTE

The artist says his design ideas rarely include predetermined color palettes. "Only after the initial, fairly comprehensive drawing has been made from the sketch do I begin working on color," says Goines.

First, he photocopies the keyline sketch on a photocopier, and then he begins working out the color, both in Blockx watercolors and Designer's gouache. (See Figure 5.) He favors complementary color schemes and tries to keep the color palette to a minimum. "In this case, I allowed the images to dictate their own colors along a naturalistic scheme—green leaves, yellow corn and musical instruments, blue sky," the artist says. This was the color sketch that was met with the client's enthusiastic response.

SPLIT FOUNTAIN It was at this juncture that he decided he wanted a smooth transition from one shade of color to the next in the sky, ears of corn and stalks. This could be accomplished using a split fountain technique, in which he would put more than one color in the ink fountain and keep them separated by mechanical stops so they would blend on the rollers.

"The split fountain technique is easy as pie to do with solid color lithography, and miserably difficult if you are required to use dots," he says.

METALLIC GOLD Goines had originally intended for the brushstrokes to be multicolored, with electric streamers waving in the air. But in practice, the idea did not work. "It was too complicated and muddy, and made the whole design jangley. So I modified it to a single mass of gold strokes," he says.

PRINTING WITH SOLID COLORS

Goines prints his posters exclusively with solid color lithography, and this devotion to a process by which a separate negative and plate are made for each color can be traced to artistic influences as well as equipment considerations. "Much of my taste was formed by Japanese woodblock prints as well as the art of those who, like Whistler and Lautrec, were themselves influenced by such prints," says Goines. "I find the keyline drawing, which is then colored in by solid blocks of color, intensely appealing. Furthermore, it satisfies the basic requirement of a good poster—that it be simple."

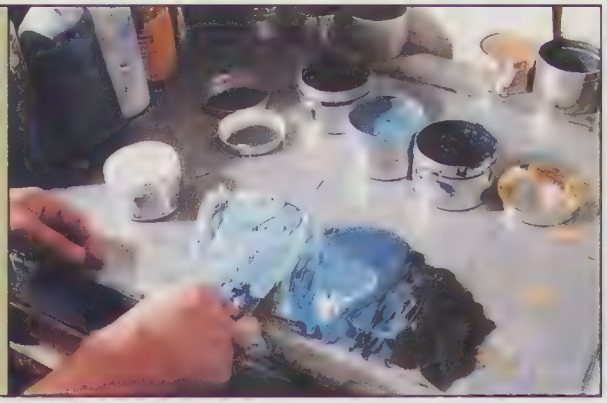
In addition, he characterizes his printing equipment as "old and cranky," so much so that he believes it is physically unrealistic for him to try to print a large four-color image.

"Printing by four-color process requires a vast reservoir of skill that I do not possess, equipment that I cannot afford and artwork that I could not produce. Printing by solid color is, by contrast, simplicity itself. Just like a poor nation, what I have a lot of is time and overrated old-world skills; what I don't have much of is money and modern technology," the artist admits.

One of the virtues of printing with sol-

8 Because Goines finds standard ink formulas too limited, he mixes all his own colors—always using opaque white so he can see the color while mixing. The inks he prefers, those manufactured by the Thomas Printing Ink Co., have a higher percentage of pigment than most.

9 Here, for example, he mixes the opaque white with the blue to achieve the soft blues. The blue was the tenth of 12 colors that would be printed.



10 On the first day of printing, Goines runs the light tan, which incorporates the entire keyline for registration of the succeeding colors. The dark tan is also run that day. He allows the sheets to dry overnight before he begins the next run.

id colors, of course, is that, like screen printing, ink can be laid down to a great density, since the subtle effects of color are not a function of precise dot sizes. "Within limits," says Goines, "colors can be printed on top of each other—a method called trapping—to give additional colors or tones."

ADVANTAGES OVER 4/C With the four-color process, Goines notes, the range of color printers can achieve is somewhat limited, "especially subtle pastels and intense, super-saturated color." This limitation is caused by dot gain, an inevitability in the four-color process. To minimize dot gain, as well as to keep colors from polluting one another on the press, the film of ink must be kept to a minimum.

"In a delicate pastel, the dot on the negative may be as small as three or four percent. When that dot gets even a little bigger, the color changes drastically. If the dot size is reduced even a fraction, to compensate for the projected gain, it may disappear altogether," says Goines.

In addition, extremely intense color is also often beyond the limits of four-color process because maximum coverage is sometimes not enough, and the printer is compelled to go to a separate, additional run of the desired shade. And when delicate colors are in proximity to saturated ones, either the delicate color is polluted by the stronger ink demands of the saturated color or the saturated color is starved of ink in an effort to keep the delicate color clean. "And last," notes Goines, "despite the enormous range of color possible, it still falls far short of what the eye can actually perceive."

In sharp contrast, however, ink can be laid down until it casts a shadow in solid color litho, as the gain in image size is relatively unimportant. And since the color is not a function of the size and proximity of a mass of nearly invisible dots, the most delicate can be printed alongside the most intense, with neither suffering in the slightest.

DISADVANTAGES There are, of course, some inherent restraints with the solid color lithography process. A significant one is that the appearance of continuous tones, such as those found in a photograph, is not achievable. Also, with four-color printing, once the negatives are made, the job can be run again and again with little variation—and no need for new separations. In solid color, the paper is run through the press for as many colors as are specified, not just four times. Every color is custom mixed, and a run of 12 colors—as with the Sioux

11 Goines' posters involve as many as 22 colors, though 10 to 12 is more common. He prints as many as three colors a day. On day two, he printed the lightest green first, followed by two darker ones later in the day. Color four, the medium green, ran on the same day after the lighter green. As he builds color from bright to dull, light to dark, each new color finds subtle intensity from the color beneath it. Color five, the dark green, is the last to run that day.

A LESSON IN POSTER DESIGN

David Lance Goines' poster graphics can be typified by a strong, simple use of form and color mass, design elements which permeate the work of the Jugendstil artists, such as Hans Rudi Erdt, Gustav Klimt, Ludwig Holwein, and others.

"Whenever I feel the need of inspiration, I refresh my eye with the work of these artists. In particular, I have adopted a few of their trademark notions: rough lines rather than smooth; outlines around color masses and lettering; blocks of color with little or no modeling; a limited, earth-tone oriented color palette," he says.

These trademarks, however, are more than a matter of taste, stresses Goines. They are very basic and functional design elements from which all poster designers can learn. Follow along as Goines details these basic do's and don'ts for designing posters.

ON ROUGH LINES AND OUTLINES "People are rather lazy and tend to do things in the simplest way, rather than the most complicated or difficult. This quality should not always be catered to, but it is necessary to accept its influence on action and thought. The eye is lazy, doing the least amount of work necessary to attain a given end; and if the work is too difficult, it might not get done at all. The designer should make his task as easy and pleasant as possible, so that his work will be effective.

"Images are perceived at boundaries and where boundaries meet at vertices. Boundaries and vertices are where the chromatic data change, and the ratios of reflectance are measured by the receptors in the eye. Boundary and vertex information is crucial for seeing. The eye or image must move so that individual receptors can experience boundary crossings. Obviously, if the number of boundaries and vertices is increased, the visibility of an image increases proportionately. Consider two pieces of string laid out to span a given distance. One is nearly straight and the other wiggly. Neither is a straight line, but each implies a delineation or series of boundaries. In string number one, the minimum clean line is represented, and in number two, a rough line. It is plain that in line number two there is more string; more to look at. Given a choice between a rough line and a clean one, the former is preferred. Since there is more of it, it is easier to see.

"A hard, sharp line is also a hard, sharp contrast; sort of a visual barrier where the eye might be inclined to stop rather than continue. A rough line eases the transition from one area to another. People are more likely to climb stairs than to scale walls.

"An outline is a transition from the paper to the image. It softens the contrast, and is itself a sort of rough line."

THE USE OF COLOR "Blocks of color with little or no modeling compel a simplicity of image, reduce clutter and thereby increase the intelligibility of a poster from a distance," says Goines. "Furthermore, since many posters today are photographic, by contrast the very simplicity and selective portrayal of detail gives the less complex design a distinct competitive edge.

"Restrained color is also a form of competition. Bright primary colors are immediately captivating, but as they lack complexity or subtlety, they soon grow wearisome and irritating. The poster designer A.M. Cassandre remarked that a poster should be a visual siren. But what happens if you are surrounded by sirens? You begin to long for peace and quiet. A bright color is like a loud automobile horn or an explosion. It quickly captures the interest, but if sustained is unbearable. Tertiary colors are like complex chords, rather than the pure note of the primary or the simple harmony of the secondary. The complex harmonics have a lesser immediate impact, but can be pleasing for long intervals. Small children are allegedly unable to distinguish subtle shades of color. As they learn and mature, greater complexity becomes intelligible and attractive. The use of harsh primaries and secondaries is calculated to appeal to the childlike aspect rather than to the adult, or to the primitive rather than the sophisticated and civilized.

"Whenever reasonable, complementary colors should be employed, as they satisfy the eye. The eye demands the complement. When you see a red square, and look fixedly at it and then away, you will see a square, green after-image. This goes on within the eye continually; everything has an after-image. Providing the complement satisfies a sub-visual demand and makes things more pleasant, that is, easier to look at.

HIERARCHY OF INFORMATION "Important information should shout. Information that is not so immediate should be more calmly presented. Most design should be rather quiet, if only out of consideration for others. A design that is easier to look at than others will be more successful than its competition. A loud, harsh design will get attention first, but the design that is easiest to live with is looked at more often and for a longer time."

Simple Form This poster was printed using seven colors and the same production techniques described in the main article.

City poster—must be repeated if a re-run is desired. The costs do not diminish much, according to Goines, as the real expenses lie in mixing the ink and running the paper through the press once for each color.

SOLID COLOR LITHO VS. SCREEN PRINTING Many viewers mistakenly identify Goines work as screen printing, but the two processes are only superficially similar. Of course, each lays down a heavy film of ink and can use ink of greater opacity than is possible with four-color process. However, the similarity between screen and litho stops there. The saturation and intensity of color with screen printing is incomparably richer than is possible by litho. However, most print specifiers find that the expense of screen printing is a formidable barrier for long runs.

"The screen process," Goines continues, "is essentially one of forcing ink through a stencil, and as such, the detail and resolution is limited by the fineness of the screen through which the ink passes. The finer the screen, the more easily it clogs, necessitating costly delays for cleaning. The amount of ink deposited on the sheet by screen printing, however, is vastly greater than is possible by litho. The colors can be almost perfectly opaque, allowing light colors to be printed over dark."

FROM CAMERA TO PRESS

When the artwork is complete, Goines takes it into the darkroom, where it is photographed and enlarged to final size. "My camera is an old 14 x 20-inch Robertson Meteorite, which means that the largest negative I make is always smaller than what I need. Consequently, the image is usually shot in two parts, necessitating that it be stripped together on the light table," he says.

STRIPPING When all the parts are assembled, he strips them up on an orange masking sheet and contacts the negative to a new sheet of film. He then contacts the resulting positive back, which results in a clean, single sheet of film with the keyline art on it.

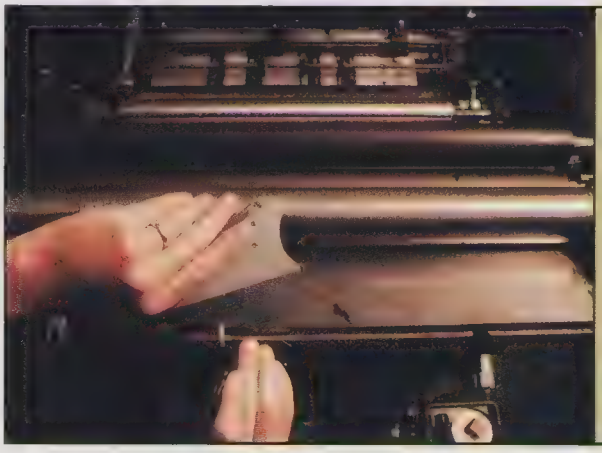
COLOR SEPARATIONS Goines makes the color separations photomechanically, rather than with acetate overlays. To mask out specific areas on the film, he paints with opaque—a red, water-based paint that is opaque to light. The area corresponding to a given color is painted in solid, and then the positive is contacted to a new sheet of film. This provides him with a negative featuring a clear area representing a given color, surrounded by the original keyline. (See Figure 6.)

"On that, I paint out everything that I don't want to appear, and, voilà! The negative is finished, requiring only the crudest of stripping. A child of six could do it. I then wash off the original positive and paint a new separation of it until all the colors are accounted for," he continues.

When he has a negative made for each color, in this case, 12, he strips them up uniformly on orange masking sheets and begins the platemaking process. "I use Kodak materials for everything, figuring that with Kodak, the only place to look if something goes wrong is to yourself."

MAKING PLATES To make the plates, he lays the stripped flat over a Kodak photosensitive aluminum plate, closes the lid of his homemade vacuum frame and exposes it to the high intensity ultraviolet light of his old-fashioned open arc lamp for approximately six-and-one-half minutes. According to Goines, the homemade platemaker smokes so terribly that he has to open the back door to prevent the fire alarms from

12 Color six is the ochre of the musical instruments, the first color to be run on day three of the printing.



13 In preparation for color seven, the ochre-green split fountain, Goines places metal stops (like those shown here) into the ink fountain. Normally, in standard flat color printing, only one color is put in the ink fountain.

14 Split fountain printing provides the artist with a smooth transition from one shade of color to the next in the ochre and green stalks. Once in place, the mechanical stops, or inserts, allow the inks to blend together on the rollers (See Figures 17 through 21 for the split fountain demonstration.)

going off, "and my lungs from filling with ghastly particulate matter," he quips. The plates are then developed and are ready for printing.

PAPER AND MIXING INKS Goines continues in his self-deprecating manner: "A fugitive from the scrapyard, my ATF Solna 24, I am quite certain, is the oldest one functioning in the United States." But it is on this press that he runs the 18 x 24-inch Mohawk Superfine uncoated paper stock to achieve the most saturated as well as the most subtle colors.

Years ago, the feeder on Goines' press began to give him problems—"it will only happily feed the very best of paper." So he was forced to switch to a higher grade paper stock; today, he prints exclusively on Mohawk Superfine 80# Cover, white or soft white, depending on the job. "Furthermore, most sheets simply aren't capable of taking that many passes through the press without wanting to turn back into a tree," jokes Goines.

After loading 1,000 of the 18 x 24-inch Natural White sheets in the feeder—that is the maximum number he can load at one time—and depositing the lightest colored ink in the ink fountain, he begins the printing process. He relies on colors going over one another to build up density of image, so the first color for the Sioux City Art Center poster is nearly invisible: "It's a background tint over the entire apparent non-image area of the poster. I wanted a darker sheet, so I printed it darker," the artist-now-turned-printer says.

Goines routinely begins all of his projects by printing the lightest color first. He explains that although a film of transparent ink reflects light more or less cleanly, the minute particles in opaque white scatter the light, creating a softer appearance and the illusion of greater density. "Furthermore," he continues, "opaque white ink allows me to see the color while I'm mixing it. Transparent ink is easy to lose track of, as you can hardly see what you're doing; it all appears uniformly dark and murky."

The most obvious drawback of opaque white, of course, is that it is quick drying and dense. (See Figure 7.) For this reason, it is not often used in halftone printing. Also, Goines offers, the gain in image area throughout a run is considerable. That is why four-color process printers prefer relatively thin, transparent inks to minimize dot gain and enhance trapping. "If you tried to print a fine halftone with opaque white, you'd have to stop the press every hundred impressions or so and clean everything off, and even then it would hardly be worth it."

Because Goines' concentration is focused on opacity, not dots, he uses an ink with a higher percentage of pigment to vehicle (made by Thomas Printing Ink Co.). "These inks will be a trifle more costly, but the additional expense is inconsiderable, particularly because I use less of it to attain a given end," he says.

Standard ink formulas, he finds, are too limited, so Goines does not use them. He mixes his colors himself. (See Figures 8 and 9.) "The PMS system, although the standard of the industry, is severely limited. Only a few hundred colors are made to answer the needs of every task. I use a simple process: Mess with it until it's right."

Generally, Goines dulls each color with its complement, and adjusts it until a "drawsheet" (color drawdown) satisfies him. "I then do a wet proof on the press, further adjusting until the color is what I had in mind. This is not as arcane as it

15 The multiple colors resulting from the ochre/green split fountain constitute color seven, the "second color" to be run on day three. Color eight, the final pass for the day, is the light/dark yellow split fountain. During split fountain printing, Goines will not stop the press as it takes the press too much time to reach consistent production again.

16 Color nine, the red, gets a day to itself because it is situated on the sheet where the feeder wheels may make streaks if the paper travels through wet.

seems, requiring only a basic understanding of color theory and a lot of practice. Printers used to do it all the time, before four-color became the order of the day. Of course, re-runs are not as simple as if a formula were used, but matching a color that I already mixed once is comparatively easy. Besides, I don't insist on a foolish consistency," he quips.

The first color he runs is the outline tan, into which is incorporated the brush tips and entire keyline. The lightest color plate always includes the keyline, because registration marks outside the image area would not guarantee accurate registration, says Goines. "They are fine for a few colors, but for twelve, it is easier to register by eye to an internal keyline. This light outline will later be covered up by the black anyway." (See Figure 10.)

After printing the darker tan, he decides there will be no more printing for the day, as the sheet is very wet, and any attempt at further printing would probably result in "picking," a problem that causes a slight rupturing of the paper surface.

Early the next day, Goines prints the lightest green, succeeded by the second green and, last for the day, the dark green. With each additional color, the color becomes slightly altered, finding new intensity from the color beneath it. "The sequence, then, is not merely from lightest to darkest, but in this case, brighter to duller." (See Figure 11.)

The next morning, day three, he prints the ochre of the musical instruments first, followed by the ochre-green split fountain and the yellow-orange split fountain corn and the brush handles. (See Figures 12 through 15.)

The red gets a day to itself, as it is situated where some of the press feeder wheels will make streaks if the paper goes through wet. (See Figure 16.) The blue-medium, blue-pale, blue-white split fountain also gets a day to itself, day five, because it has to go through twice in order to achieve the intensity Goines desires. (See Figures 17 through 21.)

"My press has only three form rollers, and starts to scum if I carry enough ink to give good saturation, so this is the only alternative. But, it has one great virtue: The second time through, the hickeys and doughnuts are in different spots, and two passes cover them up nicely."

During split fountain printing, Goines does not like to stop the press unless he has to. "Otherwise, it gets out of whack

17 From the dark blue in the left side of the fountain to the lightest blue on the right side, a smooth transition from darkest to lightest can be achieved. Says Goines, "The split fountain technique is easy as pie to do with solid color lithography, and miserably difficult if you are required to use dots."

18 This run of the blue split fountain was the tenth of the 12 colors printed. Here, Goines has added the opaque white ink in the far right to finish off the blue-medium, blue-pale, blue-white split fountain lineup. One of the benefits of printing with solid colors is that the ink can be laid down to a great density.

19 The ATF Solna Chief 24, says Goines, is probably the oldest one in existence. It can handle a maximum sheet size of 18 x 24-inches and "it will only happily feed the very best paper." His paper of choice: Mohawk Superfine 80 lb. cover, Natural White. Goines did not use registration marks during the run because the sheets sometimes change shape during multiple passes, rendering such marks useless.

THE ORIGINAL ONE-MAN BAND

It may be geographically related to the birthplace of the computer chip, but David Lance Goines' two-storefront shop in Berkeley, California, is about as far from Silicon Valley as one can possibly get. When you enter St. Heironymous Press, you are taking a step back in time.

One side of the shop houses the administrative and design areas, staffed by Goines, and the other is filled with paper and antiquated printing equipment, also staffed by Goines. He is the original one-man band. And he wants to keep it that way.

Goines got interested in graphic design through the back door. His interests in posters, graphics, calligraphy and lettering first developed in high school, when, under his mother's tutelage, he did quite a number of posters. In fact, this early love for lettering, "and especially the Speedball lettering book," continued through the years to an award-winning conclusion: In 1983, he received the National Book Award for a book he authored on lettering geometric alphabets called "A Constructed Roman Alphabet" (published by David R. Godine, Boston).

But his real introduction to the world of graphic design came while he was running a printing press. "Jobs would come into the shop needing just a little spiffing up to make them OK, and my modest abilities were exactly suited to the usual budget: nothing. So I gradually acquired a body of practical experience." He apprenticed as a pressman in early '65 at the Berkeley Free Press, which ultimately became the Saint Heironymous Press, where books, wedding announcements and posters were printed.

During that time, an occasional printing job would be brought in by an agency. And without exception, Goines relates, these agency people were "both arrogant and pig-ignorant, expecting miracles of effort in return for little money and less thanks." This left an enduring mark on the budding artist and craftsman. To this day, he will not take poster jobs from agencies. Couple this decision with his limited production capacities and it is apparent that Goines is not driven solely by money.

"I suppose that the decision not to deal with middlemen fits in with my desire to do everything myself, as well," he says. And it is this desire that fuels his success —he thrives on being able to perform tasks without having to explain himself to somebody else.

"How do you tell someone else what you have in your head? Language, of course, is the tool that is most often consulted, but in the realm of the senses, you quickly discover that words are inadequate. We quickly find ourselves reduced to caveman grunts and squeals, and the level of frustration mounts as the level of communication dwindles. The art director has a swell idea, but as he can't draw, he scouts out an artist whose style seems appropriate. The artist, in turn, cannot make color separations, mix ink or run a printing press, and is compelled to choose from a severely limited range of formalized code-like mediums for telling other people what he wants. He may want 'just that delicate shade of blue that reminds you of cornflowers,' but is stuck with PMS 279."

Indeed, Goines' own graphic idiom and its color palette are drawn from his environment. "Northern California's soft blue skies and golden hills, the Bay Area's foggy, shadowless days and temperate seasons create a certain sort of unconscious aesthetic. The eye is opened up a bit more—shadows are rarely black, contrasts less dramatic. We live in and come to prefer a palette of softer colors, subtler variations more delicately spiced," says Goines. And for these kinds of reasons, he likes to work for those who like the same things that he likes.

In his efforts to continue to improve his technique, "just to keep myself from getting too cocky or caught in a rut," once a week, Goines gets together with a group of friends to practice figure drawing. He is committed to practicing as often as he can. "We meet in the evening and take potluck with whatever the Bay Area Models' Guild is sending us. I plan, however, as soon as I can afford to do a little remodeling, to get a model in my studio once a week during the daytime."

To aspiring artists, Goines advises cramming in whatever education they can, but not to the detriment of learning the trade. Especially since, in some cases, learning a trade and going to college are mutually exclusive. "Although knowledge in some professions can only be acquired through a long, formal education, others are to a greater or lesser extent impeded by years in the classroom. A little formal education can be of the greatest assistance in any trade, but there is a certain temptation to substitute school for the real thing."

Long years in school devoted to studying art, he believes, do not teach art; they teach you how to study art. "Better to get a few of the rudiments under your belt," as Goines did himself, "and then leap into the world of doing rather than the world of preparing to do. If an art education produced artists the way, say, an engineering school education produced engineers, I might not kick so much. But the students who go to school to study art are often merely putting off the evil day when they will be forced to go out into the world and earn a living, and that living won't be by making art. Making art is hard. Talking about art, drinking cheap, red wine and living in cheerful bohemian squalor is not.

"Even a marginally successful career in art is the result of a mixture of regular hours at the drawing board, fanatical dedication, skill, talent and blind luck. Not many can stick it out, art school education or no. And it doesn't get any easier as time wears on, I'm sorry to report. Fame and fortune are neither interchangeable nor often to be found cuddling in the same nest."

But for Goines, fame and fortune could easily be found in the same nest—if he so desired. But he has chosen a simpler life over the high-volume, high-speed commercial poster business.

and takes awhile to settle down again; so I let minor blemishes through, relying on the second pass to cover them."

On the very last day, day six of the printing process, Goines runs the black, which covers up all the keyline areas. (See Figure 22.) After the sheets have dried adequately—he allows 12 hours—he loads the skids into his VW and totes them over to Marier Engraving in San Francisco for the gold stamping.

"This I cannot do myself. I've worked with Marier for many years, and they do a good, careful job. I do a press proof and then go away and leave them to it," he says. The gold leaf stamping is done on a Kluge press. It took approximately eight hours to run the 1,786 posters; the other 714 were spoilage.

SPOILAGE Since the order from the Sioux City Art Center was for 1,000 posters, Goines began with 2,500 to compensate for spoilage; he would keep 600 for himself. In all, the spoilage rate during printing was about 30 percent. Goines estimates that he lost another 200 posters to set-up, misregister and missed sheets in the process of hot foil stamping.

FINAL TOUCH-UP Only if the blemish is in the black does Goines do any touch-up. "Otherwise into the garbage it goes. I have, in the past, touched up posters, but it is a lot easier to catch a problem when it is but a child. Sometimes blemished pieces get through, but I try hard to prevent it."

SIGNING AND NUMBERING From the batch of 600 which Goines kept for himself, he signed and numbered 300. These 300 are shipped to his San Francisco gallery, Thackrey and Robertson. In addition, he signs 26 A to Z, and gives them to friends and family. He also signs and numbers three sets of progressives—the posters from the unfinished state of one color to the finished state with all the colors. In the case of this poster, there were 12 progressives for the 12 passes through the press.

POST-PRODUCTION FESTIVITIES

The project did not end with the final printing and shipping of the posters, however. The Sioux City Art Center invited Goines to Sioux City to speak about his work and the history of poster design in general. To an unusually large crowd (for a small city and a museum membership of less than 500), Goines spoke for some four hours, delighting the Iowa crowd with his wit and eccentric charm.

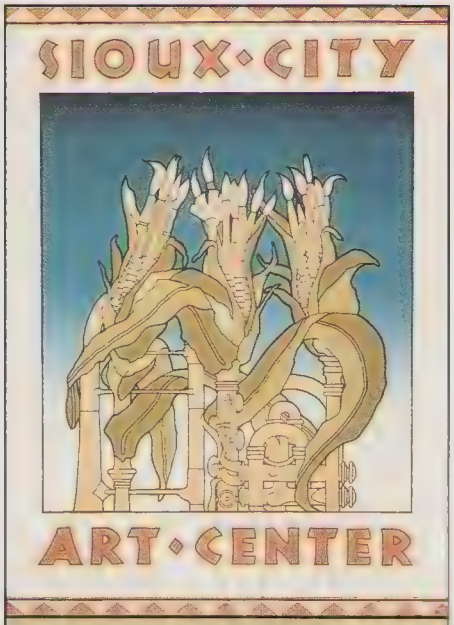
"That evening," says Everist, "he came to the fund-raising party and it was a great success. In addition to works by other artists, we auctioned four of his signed posters for $1,200 each. We netted a total of $34,000 in contributions during that event and for Sioux City, that's hard to come by. But his poster really was the impetus for the whole thing."

For an entire month during that fiftieth anniversary year, the museum showcased the progressives of Goines' poster. According to Everist, people were especially intrigued by the process. "People really aren't used to seeing how posters come about and that was a very good education." ■

—N. Aldrich-Ruenzel

20 Goines' press has only three form rollers, and it will start to scum if it carries too much ink. In order to achieve the saturation he desires with this blue-medium, blue-pale, blue-white split fountain pass, he runs it through the press twice. The subtle effects of the color gradation are not a function of precise dot sizes, rather of the way in which the colors blend on the rollers.

21 By running the paper through the press twice, the hickeys and doughnuts are in different spots each time, and are covered up says the artist. This was day five—the blue split fountain got a day to itself.



22 On day six, Goines ran black, the eleventh color. This covers up all the keyline areas that had been run in pass number one. After 12 hours of drying, he delivered the posters to the engraver for gold stamping.

Feature Animation: Disney's Delight

Follow the life-cycle of "Oliver and Company," Disney's latest full-length animated feature.

When "Snow White" celebrated her 50th anniversary last year, millions of moviegoers were breezing the tune "Whistle While You Work" through puckered lips. When Disney's new executives saw the $47 million profit turned by the re-issue, they too began whistling—double-time. The figure confirmed what they already knew; the public's desire to see animated films is stronger than ever. But rather than continue to bank on the old classics, they decided to sire a new generation of animated features. With "Oliver and Company" being released in November, 1988, and a promise of one new animation feature each year after that, an animation renaissance is underway at Disney.

It is no secret, though, that Disney has experienced a rebirth in every area of the Magic Kingdom. After years of inner turmoil and a narrow escape from a corporate takeover in the early '80s, Disney—under the guidance of Roy Disney, Walt's nephew—replaced its executive lineup with a team of creative business masterminds. Michael Eisner was recruited from Paramount to take over as chairman, and Frank Wells, a former vice chairman of Warner Bros., was installed as president. After taking over in 1984, the duo lured Jeffrey Katzenberg from Paramount to head up Disney's film division. Roy Disney continues to oversee the entire animation department.

The driven crew has managed to turn a once-stagnant Disney into one of the world's most successful entertainment institutions. In a four-year period, Disney's profits have increased five-fold and annual revenues have more than doubled. Disney's Touchstone division is Hollywood's number one studio; films like "Three Men and a Baby," "Good Morning Vietnam," and "Ruthless People" have helped the studio pull a 30 percent share of all U.S. box office revenues. Five TV shows, from sitcom and game show to Saturday morning cartoons and the Disney Sunday Movie, have made Disney a force to contend with in America's dens and living rooms; and flourishing theme parks in the U.S. and Japan will soon be joined by Euro Disneyland, expected to open near Paris in 1992.

This remarkable proliferation of live-action movie-making does not mean that animation was pushed aside until now. One week after Katzenberg joined on, projects previously put on hold were rejuvenated, whizzing animator's pencils down to stubs. "They realized quite quickly that animation is the soul and the foundation of the Disney studio," says Howard Green, Disney spokesman. "It fuels new ideas in every department, from consumer products to theme parks. It's the dog that wags the tail."

Recently, *Step-By-Step Graphics* had the opportunity to visit Disney's animation studios in Glendale, Calif., where work on "Oliver and Company" was nearing completion. The following article details the life cycle of this animated feature.

SCRIPT

"The Great Mouse Detective" was the first feature completed under the new administrative realm. During that time, Peter Schnieder was hired as vice president of animation, the animation staff was beefed up to 350 (the largest in Disney's history), and work on "Who Framed Roger Rabbit?", last summer's box office hit, commenced. To get rolling on the commitment of new animated features, it was decided that "Oliver and Company" would be the next project because the story was already complete. "The new management wanted a solid framework to go on," says Green. "Previous films were started in the middle of the story and then filled in—this was the first time there was a script before production began. Also, Jeffrey Katzenberg loved the story."

The script and story, like all of Disney's features, are designed to entertain all ages. "In real estate, it's 'Location, location, location,'" says Green. "Here, it's 'Story, story, story.'" Loosely based on the Dickens' classic "Oliver Twist," "Oliver and Company" is set in present-day Manhattan and chronicles the adventures of an orphaned kitten, a motley gang of pickpocket dogs and their seedy, but kind-hearted master Fagin. The cast is sure to impress the critics as well. Billy Joel is the voice of Dodger, ("New York's coolest quadruped"), Bette Midler is mouthpiece to an aging show dog, Cheech Marin portrays a fiesty chihuahua and Dom DeLuise is Fagin, to list just a few of the picture's talents. "This is definitely the hippest film Disney's done in a long time," says Green. Music with a contemporary flair is performed by Joel, Midler, Huey Lewis and Ruth Pointer.

STORYBOARDS

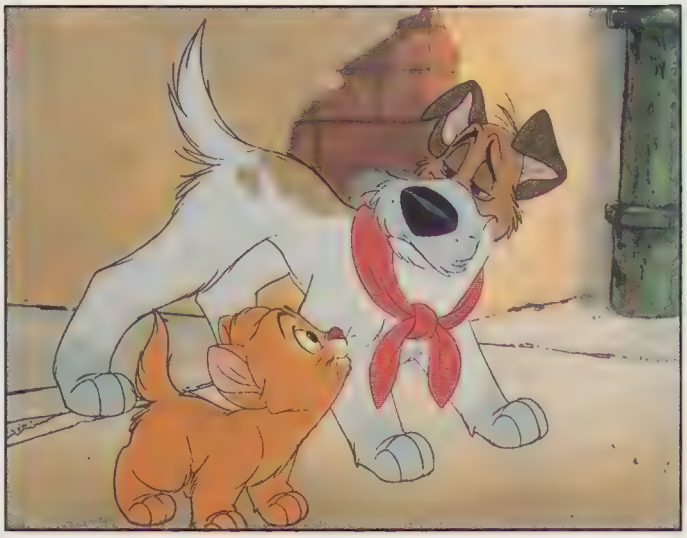
The real jamboree occurs at the Glendale animation studio, though, where people do, in fact, whistle while they work. They also guffaw, speak in a variety of strange voices, shriek and gesticulate. "You have to remember that animators are actors with pencils," says Green. Vance Gerry, story sketch artist, is a good example. "This is about the tenth time we've done this scene," he says, motioning to a series

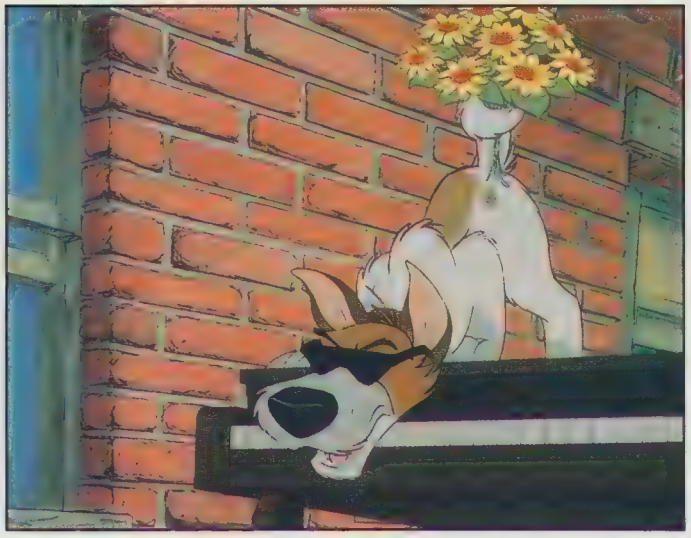
Animation Renaissance "Oliver and Company," the latest feature to emerge from Disney's animation studio, chronicles the adventures of an orphaned kitten and a gang of pickpocket dogs.

of 20 or more sketches pinned to a large, portable storyboard. These placards read like comic strips that are as big as classroom chalkboards. (See Figure 1.) On these, Gerry builds and revises sequences (five to six minutes of sub-scenes) using his own or others' rough sketches. Usually, there are five boards per sequence and 12 or 13 sequences per film.

Each sketch is about 8 x 6-inches, very sparse, and Gerry examines each one. He acts out part of the rescue sequence shown on the board in front of him: "Here, Georgette the show dog screams: 'Aaarrrhhh!' The rest of the dogs turn to her to see what's wrong." (Gerry demonstrates a quick, but exaggerated turn, one eyebrow cocked in alarm.) In a high falsetto, Gerry imitates Georgette: "I broke a nail," he cries.

STORY REEL Clutched in Gerry's hand are a series of comments on the sequence from Katzenberg. Gerry also works with Director George Scribner to synthesize or





Audio Actors The voices of Billy Joel, Bette Midler and Ruth Pointer make this Disney's "hippest" animation to date.

refine boards. After Scribner approves the sequence, each sketch on the board is shot onto 35mm film and timed to the actual dialogue. This forms the story reel. "You get a sense from looking at it how long the scene's going to play and how it will work," explains Gerry. The whole film is on the story reel even before any rough animation is done. "What I'm doing is making changes in the story. Editing? Yes, but we're also adding new ideas we think are better." Revisions are simply cut into the reel.

STATS The storyboards used for the reel are then individually shot into two, oblong stats, about the size of a Sunday paper comic strip. (See Figure 2.) One copy goes to the layout department and the other copy goes to one of six directing animators.

ART DIRECTION

Concurrent with storyboarding is art direction, which starts in pre-production and follows through to the final color on screen. "About the time they're starting to work on storyboards, I'm starting to work on what locations look right," says Dan Hansen, art director for "Oliver and Company."

"I make production design work for animation, make it work for the screen." Three pre-production jobs aid the process. First, Hansen must research the scene and set; second, he needs to massage set ideas to fit the movie; and last, he has to block the scene to fit the layout.

RESEARCH At the onset of the picture, Hansen went to New York on a four-day, fact-finding mission. "We photographed everything: dark alleys, subways, buildings, low street angles; any kind of detail: fire hydrants, post boxes." Because the picture was to look like modern-day New York, they had to be as specific as possible; Scribner was striving for a realistic style. "Subway gratings—we don't have things like that in Los Angeles. It sounds funny, but things like certain newsstands or certain fire plugs—believe it or not, they're only in New York." The next step was to incorporate those references into the production designer's concept sketches.

MASSAGING The production designer, Guy Deel, came up with several set designs. Explains Hansen: "I had to take his ideas and make them much more specific for the action and acting that had to take place, while retaining the kind of design he wanted." A little molding or massaging of the drawing can make it work, but sometimes, Hansen must completely change the production designer's drawings to more accurately match references or provide better staging possibilities.

BLOCKING Hansen blocks (stages movements) in the sequences to make sure his ideas will work. To block the scene, Hansen makes his own set of registered sketches on a tissue overlay. Each character's movement (two or three per sketch) is drawn in a different color per move, using china markers. "We're really doing scenes around the action, around the character. If we know the character has to walk across the room and pick up a telephone, we don't put a table in the middle of the room that he's going to trip over or walk around," Hansen says.

LAYOUT

The layout department, not the art director, completes the layouts, inserting even more details. Hansen oversees and organizes that operation and sometimes serves as a liaison between the layout and animation departments. "Maybe the animator decided that the setting isn't big enough—rather than taking two or three steps, the character has to walk across the room because he's got a lot of time and a lot of dialogue. In a situation like that, ideally, he'll come to us before the scene is animated and say 'Look I can't do this.' " Most of the time, the set can be changed, but because animation is done after the scenes are created, sometimes the animator has to work around set constraints.

WORKBOOK The process of layout begins with the workbook and the sketches of the background set. "Creating how you perceive the picture through the camera's lens is our function," says Bill Perkins, one of nine layout artists working on "Oliver and Company." The workbook is a device that helps maintain continuity throughout the work of different layout artists. (See Figure 3.) "We set up the workbook according to the way the director wanted the sets and staging," explains Perkins.

Camera angles specified by the director,

Photos by Alan Levenson

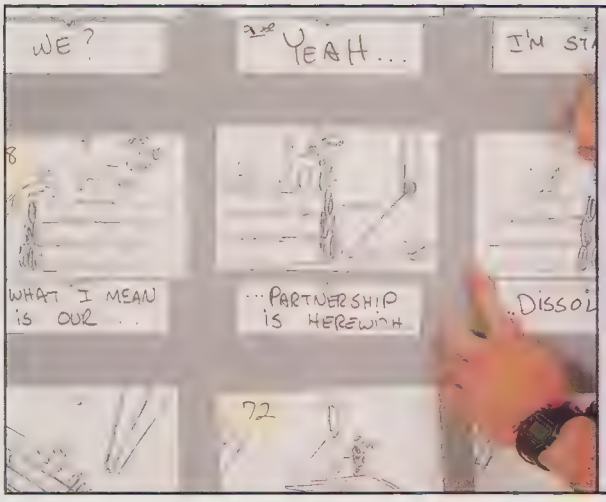
such as a low angle, a down shot, a close-up, and so on, must be mapped out. The layout artist takes these instructions from the director and works them into a diagram. For example, several scenes take place within the confines of 10 city blocks. Although a fictitious area of Manhattan, the blocks were mapped by Perkins, who then drew in camera angles with colored pencil. (See Figure 4.) Granted, these camera angles are not real; they serve as reference from which the artist draws perspective in the scenes.

Roughs of the layout are done from the diagrams and rough sketches, incorporating the perspective from the workbook. For example, if the director requested a low angle, close-up view of Oliver walking down the sidewalk, the scene would be drawn with large sidewalks, and would include only the bottoms of stoplights, mailboxes, and so on. "We just go back and forth [with the workbook] for our orientation. The workbook tells us how different scenes hook up and gives a real continuity. Although it will be subliminal, it will give you the sense of a real place," says Perkins.

Working with a copy of the storyboard stat and Hansen's set sketches, Perkins does the final drawings, adding the necessary technical details. "We look to build the environment that sets the mood for that scene," says Perkins. Each sequence has a different number of key backgrounds as well as backgrounds for every close-up; the entire picture has well over 1,200 backgrounds. This involves more than a basic set design. The title "layout artist" seems a misnomer. Considering all that needs to be done, camera man, lighting supervisor, set designer, artist, architect, staging and continuity expert combined would be more appropriate.

EQUIPMENT

To do the roughs, Perkins, like most artists in the animation department, does not work on a regular drafting table. Specially designed tables take care of specific tasks. He works on a "pan board," which, from a distance may look like a drafting table because of its size and basic structure. However, the tabletop is glass and has fluorescent lights below. Registration pegs are on two horizontally sliding tracks on the glass used when more than one overlay is needed. The tracks correspond to those used on the camera when the art



1 In the story sketch department, the picture's plot and action are worked out in a series of 20 or more sketches pinned to a large, portable storyboard. On these, Story Sketch Artist Vance Gerry builds and revises sequences (four to five minutes of sub-scenes or action) using his own or others' rough sketches. Notice how the dialogue is also pinned to the board.

2 The storyboards used for the reel are then shot into two, oblong stats, about the size of a Sunday paper comic strip. One copy goes to the layout department and the other copy goes to one of six directing animators. This gives the artists a general idea of what is taking place in the sequence, and what must be put into character animation. Backgrounds in the storyboard are spare.

3 Layout Artist Bill Perkins works with the art director to create the layouts, or backgrounds, which are created before the characters are. A workbook gives the layout artists diagrams of the correct camera angles from which to draw. It includes rough sketches of the appropriate setting. By working back and forth between the diagrams charts and the sketches. layout artists complete the rough layouts.

is shot onto film and can each be moved separately to show how the camera pans a layout, giving a sense of movement.

FIELD SIZE The size of the glass tabletop coincides with field size, the area the camera can take in. There are two basic field sizes used at Disney—12 field (12½ x 10½-inches) and 16 field (17 x 12½-inches), although other sizes are regularly used depending on the scene. For example, 24 field would be used for very large scenes, establishing scenes or mood scenes, where the camera would truck in from far away.

TOOLS Layouts are all done freehand. The only drafting tool Perkins might use is a variable ship curve. "We try and keep things from looking too straight; that can look sterile." Artist's preferences dictate the drawing aids that will be used. Rough layouts are done with a soft pencil. Perkins uses Faber-Castell Polychromos pencils, Spectracolor blue pencils with a wide lead, or NuPastel medium blue pencils. The paper he uses is custom-manufactured by Simpson and is a slightly toothy bond paper with a kid finish.

LAYOUT SCHEDULE Approaching deadline, the pace is rapid; each layout person tries to complete two layouts a day, and the department turns out approximately 50 layouts a week. Two copies of each rough layout are made. The layout department keeps one, and the other is screened back and sent to the respective animator assigned to that particular sequence. (See Figure 5.) The animators use a separate piece of paper to animate over the screened-back layout. "The reason we screen it back is for the pencil test; that's where the characters should dominate. If all the lines were the same density, they might get lost," explains Perkins.

PENCIL TEST

The pencil test is a simple, 35mm film of the various stages of animation. The story reel made from the storyboards is the first version. A rough pencil test is shot next from rough animation and is then cut into the story reel. The reel is then renamed "main reel." The cleanup pencil test is shot with cleanup animation and is subsequently cut into the main reel. When viewing a pencil test, it is not unusual to see one frame still at the story reel stage next to a fully animated frame; the revisions are continuous.

COMPUTER ANIMATION

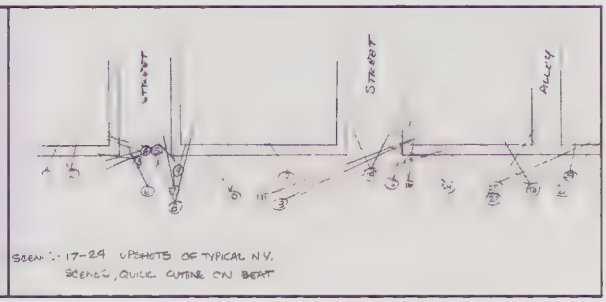
One innovation that furthers realism in the background layouts is the use of computer animation. While other recent Disney animation films have used computer-generated art ("The Black Cauldron" and "The Great Mouse Detective"), "Oliver and Company" contains eight minutes of computer-assisted imagery, more than any animated Disney film to date. In total, Disney has invested $12 million in computer research and development.

The amount of computer graphics used, though, is strictly dictated by the story. "Any image that holds its shape (inanimate objects) is generated via computer," says Green. The picture's Manhattan setting provided myriad opportunities to capture such objects. "There are cars, subway tunnels, sewer pipes, the Brooklyn Bridge; all these things play a key role in the film."

The equipment to drive this process consists of a Silicon Graphic Iris 31/30 and Wavefront three-dimensional software. After receiving the storyboard stat and the layouts for that sequence, computer animator Tina Price selects the key frames (the extreme or most important drawings). "I tell the computer the timing, what frame numbers in the reel I want those drawings to be at, and the computer does the imagery for me."

For the computer to do that, certain elements need to be digitized into the computer. "I take the layout and put it on the digitizing tablet," she says. The pin-registered tablet looks like a hybrid of a light table and a giant version of an "Etch-a-Sketch." A digitizing mouse is passed over the layout, registering the points in three-dimensional space. (See Figure 6.)

4 Camera angles in the workbook are in diagram form. The director specifies the angles, such as a low angle, a down shot, a close-up, and so on, and the layout artist maps it out. This diagram maps angles for 10 city blocks.



5 When the rough layouts are done, the layout department keeps one, and another is screened back (shown here) and sent to the animator assigned to that scene.

6 After receiving the stat and layouts for a sequence, Computer Animator Tina Price selects key frames and scans the layout on a registered digitizing tablet. The computer registers the points in three-dimensional space, and the layout is transmitted to the computer.

This is transmitted to the computer where it appears on screen. With the push of a button, Price then plugs in a model of a car or sewer pipe, for example, that she previously digitized on screen. The exposure sheet on the right will indicate which frames will use computer animation. (See Figure 7.)

This model could be a three-dimensional object or a drawing. Price prefers to work from a drawing because the image will appear three-dimensionally on screen anyway, and she feels that a drawing gives more artistic creativity when combined with the character animation.

"We'll also go back in and tweak it, grab it and stretch it to smooth it out and give it a less computerized look," says Price. Some images, like the Brooklyn Bridge, were obtained from a data bank and simply refined. The computer is also equipped with a time meter that allows that image to slow down or speed up as it is moved and captured for each successive computer "drawing" that will ultimately be shot onto a frame of film.

The entire image is then run through a process called "hidden line" to convert it back into a two-dimensional drawing via the electronic plotter. Each frame of animation is then printed out on registered grid paper. (See Figure 8.) Like standard layout procedure, this too is screened back and sent to the respective animator.

CHARACTER ANIMATION

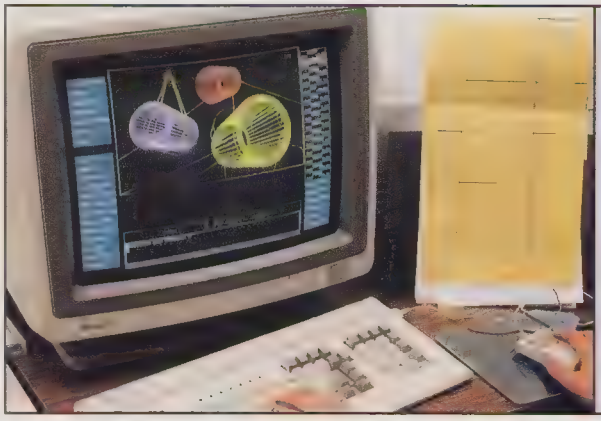
Long before the layouts arrive, the seeds of animation are being sown. "This is my inspiration board," says Glen Keane, motioning to a veritable gallery of sketches above his drawing table. Keane is one of six directing animators working on "Oliver and Company." Surprisingly, no likenesses of Bambi or Dumbo appear on Keane's board. Instead, it is inhabited by various nudes and other sophisticated studies that reveal the gravity of Keane's artistic talents. "This kind of reminds me that I'm doing more than just cartoons," he laughs. In addition to directing six of 30-some animators, Keane is responsible for character development and rough animation. (Incidentally, Keane is a second-generation artist; his father, Bil Keane, is the artist behind the "Family Circus" comic strip.)

CHARACTER DEVELOPMENT/REFERENCE While Mike Gabriel, another directing animator for "Oliver and Company" designed most of the characters for the picture, the animation is, in fact, cast. Much the same way actors are cast into certain roles, certain animators, like actors, specialize in certain types of characters. Keane, for example, is usually cast to portray the villains. "It must be the dark side in me," he jokes, "but it's who does what best, even though I have the desire to do something really sensitive and sweet." The germ of character development is in the story itself. "Who does the character need to be to make the story go?" asks Keane.

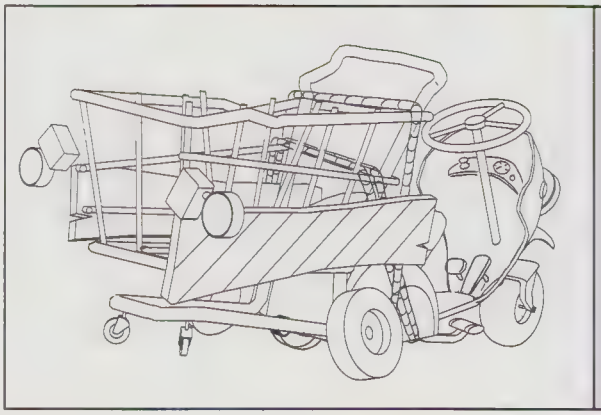
The design of the character is part of the solution. Animators tend to draw themselves into the process, so they vicariously live through the characters. "If an animator has eyes that are a little close together, they tend to draw the character that way," says Keane. The voice of the person playing the character and the way that actor looks in real life are also influential. Ratigan, the villain from "The Great Mouse Detective" is a good example. Portrayed by Vincent Price and animated by Keane, the character bears an uncanny rodent resemblance to the actor.

Using live animals for reference is a Disney tradition as well. Old photos of animators sketching a herd of deer for "Bambi" can be found on a wall of the animation studio. For now, "Bambi" remains unprecedented in its realistic style of animation; "Oliver and Company" uses animal anatomy in a more stylized fashion, developed from the actor and the animal. "The movements will be very realistic and the look will be a little more on the cartoony side," says Howard Green. During the early stages of development, there were dogs running all over the animation studio. "People would bring in their own dogs and the types of dogs we're using in the film," says Green.

THUMBNAILS Keane calls this stage his "thinking time," when he can explore. "The first approach is how do I interpret the acting. Think about the way you would expect something to be done and then don't do it that way; you always want something fresh and different." The character is fleshed out in pages of thumb-



7 Price then plugs in a model of a car or sewer pipe, for example, previously digitized on screen. "We'll also tweak it, grab it and stretch it to give it a less computerized look," says Price. The exposure sheet on the right indicates which frames will use computer animation.



8 The entire image is then run through a process called "hidden line." This converts the image back into a two-dimensional drawing on paper. This, too, is screened back and sent to the animator. This piece of computer animation is Fagin's mode of transportation.

nails, and countless variations are experimented with for every action. (See Figures 9, 10 and 11.)

ROUGH ANIMATION Once Scribner is satisfied with the action in the thumbnails, Keane starts refining the scene with rough animation. Keane does not do every single drawing for the scene; including the early sketches, it took two million drawings to make "Oliver and Company." Rather, Keane animates the main actions in the scenes he is assigned, and other animators will do the "in-betweens."

Maintaining continuity can be difficult, says Keane. "That's the tough part of animation—working with a team of people. You've got a whole slew of artists, each wanting to feel that they're making their own contribution to the picture, and yet you don't want the audience to feel like there are a zillion different characters in it. It's a Walt Disney picture and it should be almost as if Walt Disney did it himself." It is Keane's responsibility as a directing animator to oversee and work with the other animators to keep characters and sequences consistent.

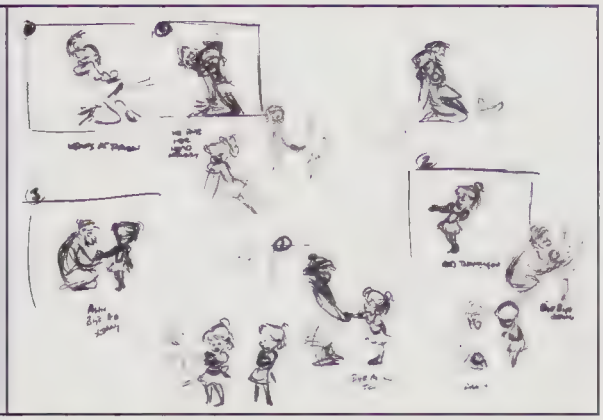
For the rough animation, Keane uses as soft a lead pencil as possible, preferring the Blaisdell layout pencil, which is no longer manufactured. (Disney bought as many as it could and rations them out to the animators.) He tries to keep the drawing fluid and loose. (See Figure 12.) The paper he uses is registered animation paper, a coated, custom-manufactured stock. This is placed over the screened-back layout on the animation desk. Keane's specially designed desk has a registered metal animation disk in its center. Inside is an opaque, plastic sheet that allows fluorescent light to come through; Keane, however, does not like the light. He animates on top of the metal disk.

To give him an idea of how the finished rough animation will look in the pencil test, the roughs are held together in booklet form. When the pages are quickly fanned down, the characters appear to move as they would on film. (See Figure 13.)

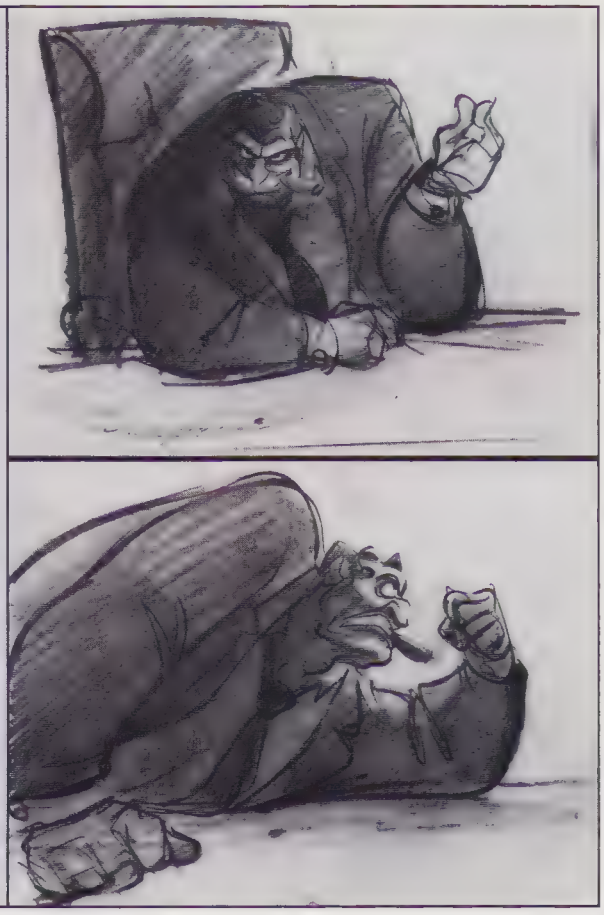
Keane narrates a scene he has just put into book form. "Jenny, the little girl, says, 'Bye Mr. Fagin.' " Keane timidly speaks the line, pulling back a little. "Then Fagin takes her hand and kneels down, 'Awe, bye-bye Jenny,' " says Keane, mocking Fagin's gruff voice. "All Jenny needs here is a little display of affection and that triggers her; she just dives at him and gives him a huge hug," says Keane, quickly curving his arms around the air in front of him. "Just the way my little girl hugs me. Something I relate to is so much of what I base something on," Keane explains, fanning the pages of the book down in slow motion.

To make speech more realistic, Keane listens to the dialogue and draws the mouths so that they reflect what is being said. Looking in the mirror helps this process. But in order for the artist to know

9 Thumbnail sketches are the first stage of character development and action, and there are pages of countless variations of every action. Glen Keane explains his method: "The first approach is how do I interpret the acting. Think about the way you would expect something to be done and then don't do it that way.



10 Many versions of a character are explored before the final version is approved by the director. These are examples of character studies Keane did of the picture's villain, Sykes. Although Mike Gabriel designed most of the characters for the picture, animation is, in fact, cast much in the same way actors are. Keane is usually cast to portray the villains. Notice how dark his lines are. Keane likes to use as soft a pencil as possible for his sketches.



when to draw what is being said, they must follow an exposure sheet while animating. (Refer to Figure 7.)

EXPOSURE SHEET The exposure sheet is the animator's bible. On it is a line for every frame of film. There are 24 drawings for each second of film, so the lines are in increments of 24 to a sheet. "We write down the dialogue that the character is saying on a space in the line." To the eye, this makes the letters appear to spell the word vertically. "I know, for example, on frame 15 I have to have a 'b' sound because Jenny says 'Bye Mr. Fagin,' " Keane explains. The exposure sheet is also the guide the cameraman works from when shooting animation onto each frame of film.

CLEANUP ANIMATION

After rough animation, the sketches go to cleanup. "What you see are not the animator's drawings, but the cleanup artist's drawings," Keane confides. "It's real important that the cleanup person works in concert with the animator; he has to get into the mind of the animator and know what that guy was thinking and understand all the things he is trying to get across."

Cleanup artist Bill Berg concurs: "Character animators cannot get bogged down with detail, so their animation is purposely rough and loose to maintain fluidity of line. We work with the animator to achieve the final drawing." To do this, the cleanup artist must take the rough animation and put it into a single-line, refined drawing.

Like Keane, Berg works on an animation desk. Unlike Keane, Berg lights the desk from below as he animates. He places the rough animation on top of the plastic panel and directly refines and details it with a non-repro blue pencil. A fresh piece of animation paper is placed over the refined animation, and with a soft lead pencil (2B is Berg's preference), a single-line drawing is made, incorporating the non-repro blue details. (See Figure 14.) The director then inspects the art.

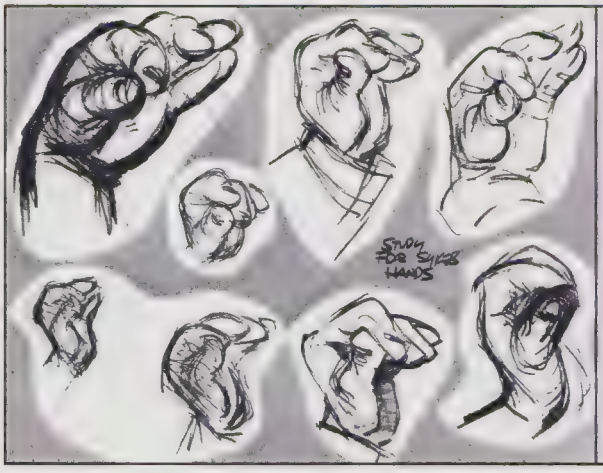
XEROX LINE METHOD

Perfected by Disney animators in the late 1950s, the Xerox Line method was first used in "101 Dalmations" and is still used today. The xerographic process transfers an image electrostatically to an animation cel or board, giving animation a linear, graphic look. The principle behind the process is similar to the workings of a basic office copier. It is produced in three separate areas, a camera room, platen room and transfer room. Most of the equipment for it was built at Disney. When cleanup animation of all art is approved, it is xerographically transferred onto 5 ml tri-acetate cels, and the cleanup layouts are photocopied onto 100 lb. Crescent cold press illustration boards. This saves the time of having to ink every cel by hand from the cleanup animation.

EFFECTS ANIMATION

Effects animation goes through the same stages as character animation: thumbnails, rough animation, in-betweens and cleanup. "In 'Oliver and Company,' half of all the scenes have some sort of effect," says Barry Cook, supervisor of the 11 artist effects department. Sometimes a scene will consist exclusively of effects. For instance, in one scene, the villain Sykes spins his car's rear tire—rubber rips off the wheel and sparks fly.

Most effects use some photographic



11 The most minute details of a character are also studied. In this example of Sykes' hand, for instance, notice how many variations were tried to show the fingers preparing to snap.

12 Once the director is satisfied with the action in the thumbnails, Keane starts refining the scene with rough animation, again using only a soft pencil (he likes using a Blaisdell layout pencil) and 12-inch square, registered coated paper which is placed over the screened-back layout. This layer is registered on the metal disk in his animation desk. Notice how fluid and loose Keane's rough animation is.

trick to achieve the desired result. Therefore, the effects animator has to be a skilled photographer as well as artist. Here is a basic example: To create a shadow, the outline of the shadow is drawn in pencil, photocopied as black and the shadow area painted as opaque black. The scene is shot at half the normal exposure (which will vary depending on the situation). The film is then wound back, and the image shot again at whatever exposure would achieve 100 percent when combined with the first exposure. Reflections are done the same way. "We call for certain filters, exposure times and tricks to get the effects," says Cook. This, too, is indicated on the exposure sheet.

"If something's not standard (which happens about every fourth scene), we have to follow through to the camera stage," explains Cook. Oftentimes, this means specifying a "wedge test" which will demonstrate how the effect will work before the actual shooting. Using the actual camera that would shoot the animation, the effect is shot in progressive steps from low to high exposure. Cook receives the wedge test in a 35mm film strip and reviews it through a machine similar to a filmstrip projector to determine which of the exposures worked best.

ANIMATION CHECK

Before any cel or board is painted, the animation checking department receives the exposure sheet and all art components to a sequence. They make sure that every effect has or will be added and they triple check each element to make sure that everything matches the exposure sheet correctly. At this point, they may make a new exposure sheet. After changing so many hands, the original can be messy and full of many different kinds of marks and numbers. The camera operator receives the new, more legible copy.

BACKGROUND PAINT DEPARTMENT

When the cels and illustration boards enter the paint department, they are black outlines on clear acetate or white board. The colors that will adorn the backgrounds are on one-by-three-inch strips of paper called "color statements" which are aligned on a large board. (See Figure 15.) Each board represents a sequence. The color statements are multi-colored swirls rather than a single color, and the orchestration of all of them on one board is called a color study. Jim Coleman, the key background painter for "Oliver and Company," explains: "The entire film is broken down into color statements on boards. This gives a feel for the mood of a sequence." There is no one set palette for the film; rather, each scene will have a palette. In the rescue sequence, for example, somber swirls of olive green and putty predominate.

PAINT STYLES The completed color study goes to the director. If he likes it, the sequence is broken down into color sketches (refer to Figure 15) and then painted on the photocopied lined illustration board. "We're trying to give this picture an impressionistic feel through color and the way we're painting it—as a blend of realism with some cartoon elements in it," says Coleman. Tools used in the background paint department are also selected by artist's preference and the effect desired. Airbrush is often used, and sometimes even sponges are used to achieve a certain look.

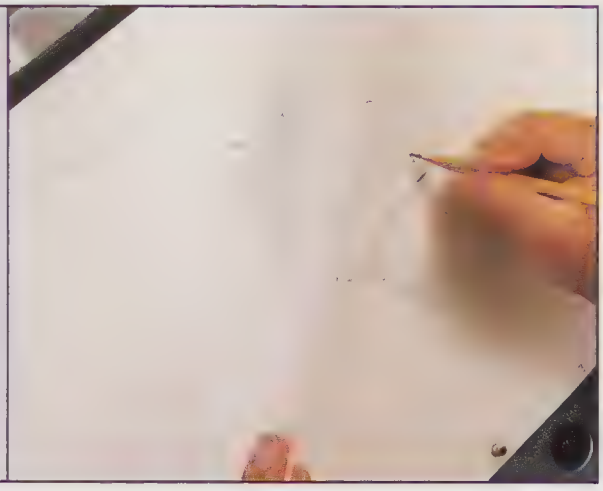
PAINTS AND INKS Cels and layout boards are all painted by hand; the photocopied lines are where the artist must paint to. The paints and inks that are used at Disney are unique. Manufactured in Disney's own paint lab, the secret formulas give a look that is impossible to duplicate. Most pictures are painted with gouache, but for "Oliver and Company," acrylics were used because they adhere to the cel better than gouache, allowing for more detail to be added.

ART DIRECTION II

The painted animation must pass under

13 To give him an idea of how the rough animation will look in the pencil test (where the rough animation is cut into the story reel for a more refined version of the film), the drawings are held together in booklet form. When the pages are quickly fanned down, the characters appear to move as they would on film. Keane listens to the dialogue as he draws the mouths.

14 Rough animation goes to cleanup, where consistency is solidified. Placing the rough animation on a lighted animation disk, Cleanup Artist Bill Berg adds detail to the rough animation with a non-repro blue pencil. A clean piece of animation paper is then placed over that, and working back and forth—not exactly tracing—a more detailed, single-line version is created.



the watchful eye of an art director, who makes sure the color is consistent. Post-production is the wrap-up phase of the art director's job. "Although the director has the final say on the color, it's up to me, too," says Dan Hansen. For the final shots, Disney uses a three-strip successive exposure film (Technicolor), a trickster of a film stock which builds color and contrast because its development process is additive—it adds dye to the film rather than subtracts, like the Ektacolor development process. "A subtle green paint can become bold on the film," says Hansen, who can only use his experience to second guess the outcome. "I have to know how each color will turn out on film regardless of how it looks to the eye."

CAMERA

The approved painted cels and boards are ready to be shot onto film. A four-board camera was used to shoot "Oliver and Company." (See Figure 16.) This steely black monstrosity of a machine looks futuristic in a 1950s sort of way. If the camera were a giant microscope, the shooting area is the plate where the slide would be placed. The background board is registered on the plate and the cels are registered over it. There are approximately 1,000 backgrounds for each 100,000 cels.

The animator's exposure sheets are sent to the camera department with the finished artwork. The sheet tells the camera operator how many frames a background must remain in place, and what cels are dropped over it.

The daunting appearance of the camera belies its operational simplicity. "Everything is manual," says Errol Aubrey, camera operator. He pushes a button and the camera hisses into place like an old steam engine. The frame is shot with a quick click.

PANS The plate area is divided into four equal glass portions (thus, the four-board camera). Four background boards can be registered at once, and a knob at each division moves its respective board for panning purposes. For example, a pan of Oliver crossing a street would be done with four boards that connect. One board would be of the left sidewalk and curb, the next connecting two would be a two-lane crosswalk, the next would be the other side of the street. The knobs simply roll the scene by, achieving a pan.

EFFECTS As many as six layers can be on top of one background. Some are for special effects, like a photostat of rain or snow. These are done with multiple exposures and are reusable.

ACCELERATED PROGRESSION

It takes approximately three years to complete an animated feature. And as final touches are put on "Oliver and Company," work around the animation studio has hardly toned down. In order to keep up with the new animation agenda of one feature a year, areas throughout the animation studio are immersed in different projects.

Work on "The Littlest Mermaid," Disney's next animated feature, is well underway, and it is easy to discern which area of the studio is engrossed in that picture. An aquarium brims with a variety of fish, driftwood adorns one desk, cut-out streamers in the shape of lobsters swing from the ceiling.

Project areas are not mutually exclusive, though; ideas roam freely and surprises are around every corner. Above all, one gets the sense that working in the Disney animation studio is great fun. Down one corridor, someone clad in an expertly crafted Dodger costume struts in and out of the various departments, like a large stuffed animal in search of some mischief. "Things like that happen all the time around here," laughs Glen Keane, shaking his head. "Hey Dodge—lookin' pretty cool!"

What would Walt say about all of this? Probably the same thing. ■

—Susan Dinges

15 In the background paint department, the colors that will adorn the lined illustration boards are on strips of paper called "color statements" that are lined up on a large board. Each board represents a sequence and is called a color study. The color sketches on the lower portion of the board incorporate the colors in the color statement.

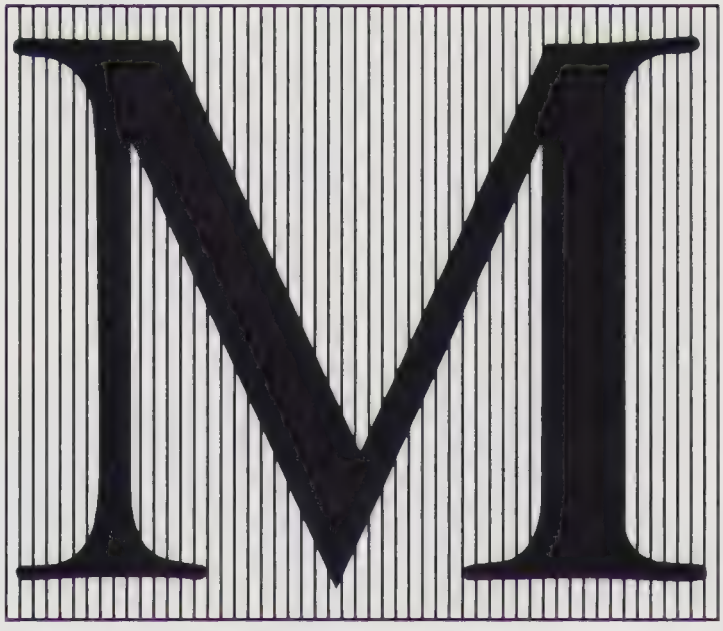
16 The approved painted animation is shot onto film. A four-board camera was used to shoot "Oliver and Company." The background board is registered on the plate and the cels are registered over it. The animator's exposure sheets are sent to the camera department as well. This tells the camera operator how many frames a background needs to be in place, and what cels are dropped over it.

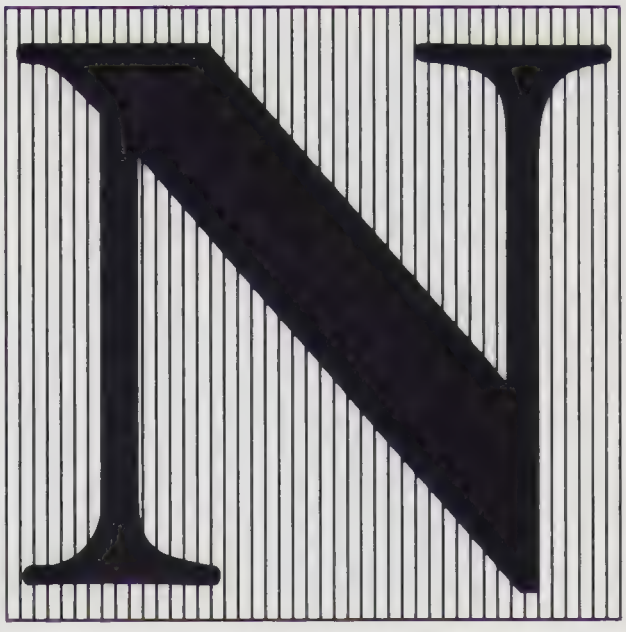
typography

A Visual Balancing Act

Controlling the space between characters, words and lines is the key to creating fine typography. Here's how to do it.

By John Negru





Windows The unit is the basic element a typesetting machine uses to determine the width of characters and the values of spaces between characters and/or words.

For the most part, type suppliers are most often judged by how accurately they follow a designer's instructions. But truly fine typography goes far beyond the mere placement of letters on a page. Making active use of white as well as black, a good typographer controls all aspects of typographic space to create a harmonious, dynamic word picture.

In this article, the two main tools typographers use to control that space will be discussed: 1) horizontal positioning—tracking and kerning; and 2) vertical positioning—leading.

HORIZONTAL SPACE

Type is generally measured in points and picas. There are 12 points in a pica, 6 picas in an inch. But when working with horizontal space, typographers work with another, more precise measurement: units. Units are the basic element a typesetting machine uses to determine the width of characters and the values of spaces between characters and/or words. Typewriters use a one-unit system, assigning every character the same width. Typesetting allows far more flexibility, since every character has a unique width. This width, called set width, is defined by the number of units of space a character fills. The wider the character, the greater the unit value. (See opener.)

Although unseen, each character in a font sits inside a window, the width of that character plus several units of white space on either side, to ensure character pairs do not normally touch. Unit calculations are done by measuring windows rather than characters, and any adjustments affect the size of the windows, not the characters themselves. The unit scale is a relative measurement, created by dividing one em (a unit of linear measure equal to the square of the type size being set) into a fixed number of equal parts. A particular character will occupy the same set width regardless of point size. Set width varies from character to character (see opener) and face to face (see Figure 1).

Some typical unit scales are 18, 54 and 144 units to the em. While it is true that the greater the number of units to the em, the greater the flexibility for typographic refinements such as tracking and kerning, there are still limits. Typesetting equipment with less than 18 units to the em yields very crude spacing. Equipment with more than 60 units to the em offers a degree of refinement not noticeable to the naked eye. Font-supplied spacing is usually quite loose, to allow for maximum flexibility in character fit. Problems can be created in poorly designed fonts, however. If the windows are too large or small, the result is uneven spacing.

While you may never need to worry about unit calculation, it is important to

understand how typesetting machines use units in order to make the best use of the tips presented here.

LETTER SPACING

Type is made to be read—a simple observation, but nevertheless important. Legibility research has shown that people read words as integral pictures, rather than as combinations of separate letters. Therefore, the typographer's first job is to adjust the overall letter spacing of the typeface being used, in order to achieve maximum word recognition. Because font spacing is loose, this adjustment generally takes the form of tightening up space, a process known by various names: tracking, character compensation, or standard white space reduction.

TRACKING Known as the uniform subtraction of units from every character window, tracking is available in various degrees. Unless you are completely familiar with the unit system of the particular equipment your typographer uses, it is better to simply specify the degree of tracking you require, such as loose, normal, tight or touching. (See Figure 2.)

Remember also that legibility is context-sensitive. While normal tracking is suitable for most printed material, other situations will require different degrees of tracking.

Television graphics and children's books routinely use loose tracking. In advertising work, tight tracking is still very popular. Very tight tracking is used almost exclusively for ad copy in large point sizes, where a few words must carry a strong emotional impact. It is also appropriate for signage and for audio-visual material that will be viewed at very large sizes.

WORD SPACING It is important to harmonize letter and wordspacing for maximum readability. Overly small word spaces make individual words hard to recognize, while overly large word spaces can reduce reader comprehension by creating disconcerting gaps in a line and ugly rivers of white in blocks of copy. (See Figure 3.)

Like letter spacing, word spacing is flexible. In justified copy, it is the first variable the machine alters to align left and right margins, based on minimum/optimum/maximum unit values preset by the typographer. In lines where justification is impossible simply by altering word spacing, the machine will then uniformly adjust letter spacing as the next variable. In unjustified copy, however, word and letter spaces are each fixed at one uniform value.

KERNING Kerning is the selective enhancement of character fit in specific character pairs, particularly where irregularly-shaped characters are involved. In the opinion of many designers, it is the single most important criterion for evaluating typographic excellence. It can make a dramatic difference in the overall appearance of a piece.

Imagine for a moment that the white

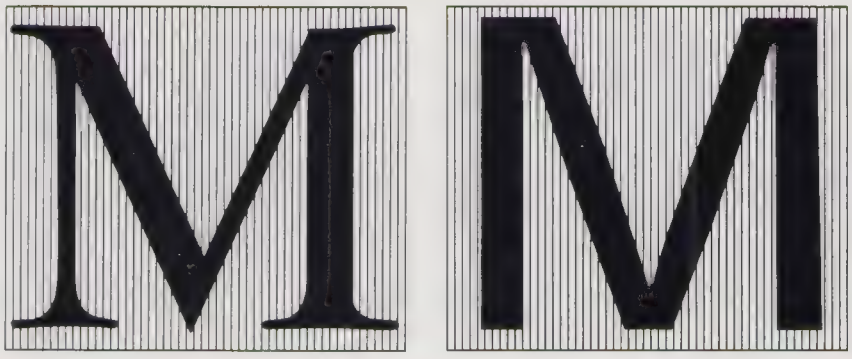


Figure 1 Here, a grid of 54 units to the em shows the respective widths of a character set in two different faces. Set widths vary from character to character (see opener) and from face to face.

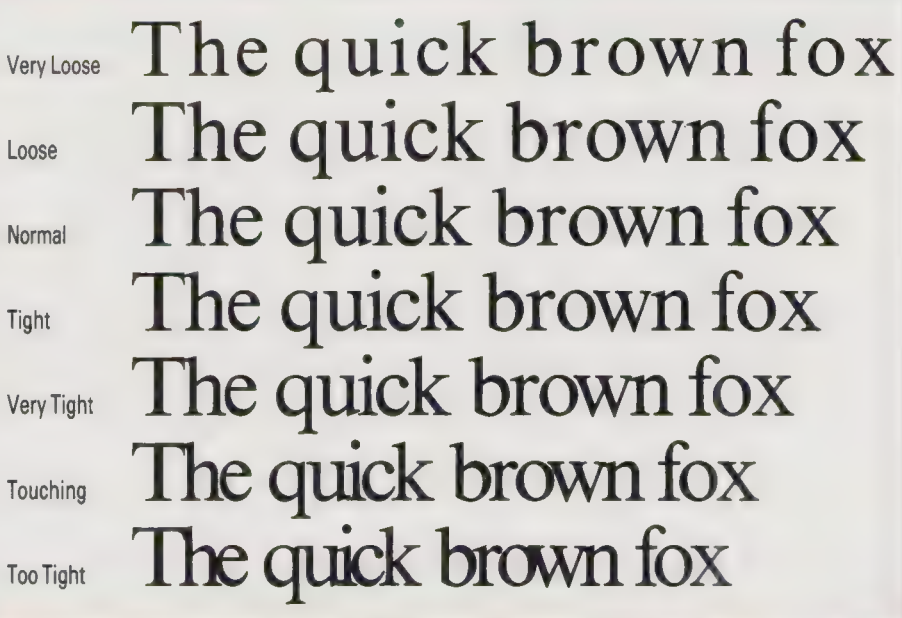


Figure 2 Tracking is the uniform subtraction of units from every character window. Seven different degrees of tracking, from very loose (at top) to overly tight (at bottom) are compared here.

The quick brown fox jumps over the lazy dog. This brief sentence containing all the letters of the alphabet is the basis of the typographer's art. But modern composition goes far beyond it, combining a vast assortment of typefaces with all the power and flexibility of the computer. On-line functions include the search-and-edit capabilities of word management, virtually unlimited

The quick brown fox jumps over the lazy dog. This brief sentence containing all the letters of the alphabet is the basis of the typographer's art. But modern composition goes far beyond it, combining a vast assortment of typefaces with all the power and flexibility of the computer. On-line functions include the search-and-edit capabilities of word management, virtually

Figure 3 Justified body copy which has well-coordinated letter and word spacing and which employs hyphenation (left) is much more readable than copy set without hyphenation (right). The latter will inevitably contain uneven spacing and rivers of white.

LAWYER LAWYER

Figure 4 Sometimes font-supplied kerning produces type which is too disjointed. In such instances, extra kerning may be necessary.

AC AC AC AC

Figure 5 Compare this kerning pair shown in serif and sans serif. The samples on the left have the same kerning value. The samples on the right have the correct values for each face.

AC	AG	AO	AT	AV	AW
AY	DA	FA	JA	LT	LV
LW	LY	NA	OA	OV	OW
OX	OY	PA	RV	RW	RY
TA	UA	VA	WA	YA	
Av	Aw	Ay	Pa	Pe	Po
Ta	Te	To	Tu	Tr	Tw
Ty	Va	Ve	Vo	Wa	We
Wo	Ya	Ye	Yo		

Figure 6 Because of their angular or rounded shapes, some letters automatically call for extra kerning. Some of the most common kerning pairs are shown here.

A'	'A	D.
L'	P.	T.
D'	F.	J.
V.	W.	Y.

Figure 7 Certain character and punctuation combinations, such as the common kerning pairs shown here, may also be considered for kerning.

010	.1.	,1,
74	7.	7,
:1:	$1	1st

Figure 8 While display numerals all have unique set widths, text numerals have the same set width. Nine kerning pairs for text numerals are compared here.

space between characters is like a bucket of sand. The object of kerning is to ensure that every bucket holds the same amount of sand. (See Figure 4.)

Kerning values are font-sensitive. The same character pair may require a different degree of kerning from face to face, depending on stroke and serif structure, as well as the set width window structures. (See Figure 5.)

A typical font contains two alphabets (upper and lower case), ten figures, more than 15 punctuation marks, and about 20 related symbols, for a total of about 120 characters. Drawing from that group, there are more than 14,000 possible character pairs in any font. Fortunately, the vast majority of these possible pairs do not require kerning. It is only where irregularly shaped characters are involved that kerning is imperative.

COMMON KERNING PAIRS Typographers generally include aesthetic kerning as part of their house style, working with a kerning table of approximately 256 character pairs. Of these, 50 are common letter combinations that require kerning in almost every typeface. For the most part, this means tightening up the space around irregularly shaped upper case characters such as: A, J, L, P, T, V, W and Y. In some faces, other characters that commonly require kerning are: C, D, G, K, O, Q, R, U, X, a, e, j, o, r, t, v, w and y. (See Figure 6.)

KERNING PUNCTUATION Although punctuation marks are relatively small characters, they must also be properly handled to ensure maximum legibility and even type density. Figure 7 gives 12 common kerning pairs involving punctuation.

KERNING NUMBERS Numbers come in two forms: Text and display. Text numerals all have the same set width, while display numerals each have unique set widths. When working with text numbers, kerning is required around the characters 1 and 7, except in columnar situations where groups of figures must line up vertically. (See Figure 8.)

POSITIVE KERNING Certain character pairs may require more space than is allotted by the font-supplied set widths. In this situation, kerning involves adding rather than subtracting space. (See Figure 9.)

In sans serif faces, there are 10 more character pairs which should be monitored for possible positive kerning, particularly if tight tracking is being used. (See Figure 10.) Similarly, positive kerning may

be required around hyphens, especially in situations such as dates and phone numbers, where figures are involved.

Note, however, that the characters 1 and 7, with their negative kerning requirements, cancel out the need for positive kerning in hyphenated pairs where they are involved.

LARGE POINT SIZES When you are kerning large point sizes, uneven spacing between characters becomes much more obvious. In order to even out the overall type density, kerning may be required for every character pair, including those not normally kerned in body copy sizes. (See Figure 11.) The object here is not necessarily to remove as much white space as possible from every pair, but simply to create the optical appearance of consistent spacing. Sometimes the same character pair will have a different degree of kerning in different words, due to spacing needs in a particular word or line elsewhere. (See Figure 12.)

PUTTING IT TOGETHER Most type shops have established house styles to best suit the needs of their average clients. While there is no standard proofreader's mark to indicate changes in tracking, letter or word spacing, always request changes if you are unhappy with that aspect of the shop's work. It is a legitimate part of the process of creating fine typography. However, bear in mind that unless you have specified in advance the degree of tracking, letter spacing and word spacing you require, such changes will normally be billed as author's alterations.

OPTICAL ALIGNMENT

When aligning to the left margin, some irregularly shaped characters, such as A, J, T, V, W or Y, may appear either to be indented or to hang into the margin. This problem can be corrected by creating tabs with different left margins to visually balance lines that are out of alignment.

Similarly, lines that begin with an open quote may be set with the quote mark hung in the margin, so the following character aligns with the first characters of other lines before and after. (See Figure 13.)

SPECIAL CASES There are four types of fonts that require special horizontal spacing because of their inherent design features: swash, ligature, connecting script and ornamental. Swashes are enlarged flourishes that replace serifs or terminals. Because these strokes may require extra space so as not to crash into adjacent characters, all other spacing in text where they are used must be opened up to the same degree. In other words, when using swash characters, avoid tight tracking and kerning. (See Figure 14.)

Ligatures are character pairs that are joined together and typeset as one character. They cannot be built by tight kerning because the design of each character is altered to remove discordant elements. Furthermore, their fixed internal letterspacing will look out of place if the remainder of the text is set with a different degree of tracking or kerning.

Connecting scripts feature individual characters that are designed to flow together when typeset, simulating the flow-

(J) (T) (V) (W) (X) (Y)
J' T' V' W' X' Y'
'T 'V 'W 'X 'Y
ff fi fl
II (roman numerals)
TV (as a stand-alone word)

Figure 9 Certain character pairs may require more space than is normally allotted by the font-supplied set widths, as in these examples.

ft rh ri
oo OO TT
rm rn rt
00 (digits)

Figure 10 When working with sans serif faces, there are other, unique character pairs which might benefit from positive kerning, especially with tight tracking.

Display point sizes
Display point sizes

Figure 11 When working with larger point sizes, uneven spacing between letters becomes more evident (top). Sometimes, kerning between each character pair is required (bottom).

ONLY LYRE
ONLY LYRE

Figure 12 Sometimes the same character pair, used in two different words, will require different degrees of kerning, depending on their use and placement.

"The quick brown fox jumps over the lazy dog. This brief sentence containing all the letters of the alphabet is the basis

Figure 13 Quote marks set at the beginning or end of a line may create an unnatural visual indent. To remedy this, the quote mark can be set in the margin, with the next character aligning with the first characters of lines above and below.

The Swash

Figure 14 Swash characters (like the cap S) require special treatment. All surrounding text must be opened up to a similar degree. When ligatures like Th are used, the surrounding text must carry the same degree of tracking.

ing pen strokes of hand-drawn calligraphy. Because of their design, connecting scripts should always be set with font-supplied spacing; otherwise, connecting strokes will not align properly. By comparison, non-connecting script faces may be tracked and kerned in the same way as regular serif and sans serif faces.

Ornamental faces feature highly individualized font designs that do not follow standard rules of letter and word spacing. They may require considerable reworking in order to look their best.

SPACING & TYPE MODIFICATION Type modifications include reverse, wrong-reading, outline, contour, shadow, texture, curved baseline, reproportioned perspective and custom lettering. Each of these cases requires special attention to tracking and kerning, and will not necessarily assume the same values as similar unmodified text. If you intend to modify the type you are ordering, be sure to inform the typographer in advance, in order to get the best possible spacing.

When working with a reverse (white type on a black background), for example, avoid tight tracking and kerning because reverse type is not as legible as regular type, and it requires the extra internal spacing to increase legibility. Furthermore, when the piece is printed, ink spreading out into the pores of the paper may obscure parts of characters which are set too close together.

Outline, contour and shadow faces may require hand retouching where tight letter spacing causes characters to overlap. Curved and reproportioned type may also require hand retouching where altered perspective squeezes character pairs together, unless ample letter and word spaces are built in.

WORKING WITH VERTICAL SPACE

When working with vertical space, typographers use the terms point size and leading. Point size refers to the height of a particular character or group of characters. It is measured from the top of the cap height or ascenders, whichever is taller, to the bottom of the descenders, with a small amount of white space above and below so that lines of type do not normally overlap. While modern typesetting equipment has the capability of setting a virtually unlimited range of point sizes, tradition usually dictates the use of these standard sizes for type: 6, 7, 8, 9, 10, 11, 12, 14, 18, 24, 30, 36, 48, 60, 72, 96 and 108 points.

Leading refers to the space between lines of type. The term dates from the days of metal typecasting, when thin strips of lead were inserted between lines of type to spread them out vertically. Leading is normally measured in points or fractions of points, from baseline to baseline.

Type size and leading are usually specified as a fraction, such as 10/11. The first number is the point size; the second is the baseline to baseline space (point size plus extra spacing). Type that is set with no extra leading between lines (for example, 10/10) is referred to as "set solid." Whatever space exists between the lines is accounted for by the small amounts of white space above and below every character, as determined by the font design.

GENERAL GUIDELINES Choice of leading is basically a trade-off between maximum readability and aesthetic placement. The following are a few suggestions for improving comprehension in different contexts.

Text set with one or two points of extra leading is easier to read than when it is set solid. In contrast, display type (18 points and over) is easier to read when set solid or reverse leaded (see the section on reverse leading). Sans serif, condensed and other faces that have a strong overall vertical stress (such as those with large x-heights, long ascenders and descenders or swash) are easier to read with extra leading. Lines of copy that are longer than two-and-one-half times the length of the lower case alphabet are easier to read with extra leading. Reference materials such as catalogs can be set with tighter leading than text that is to be read in its entirety.

REVERSE LEADING In the days of metal typecasting, the closest two lines of type could be set, without specially mortising (cutting) the character matrix, was solid. Mortising was a laborious process used almost exclusively for large display heads. With modern photo and digital typesetting equipment, type can easily be positioned anywhere, with settings tighter than solid, even overlapping. This procedure is known as reverse, negative or minus leading. In a specification of 36/30, for example, the leading is six points less than the point size. Reverse leading is particularly common when working with large point

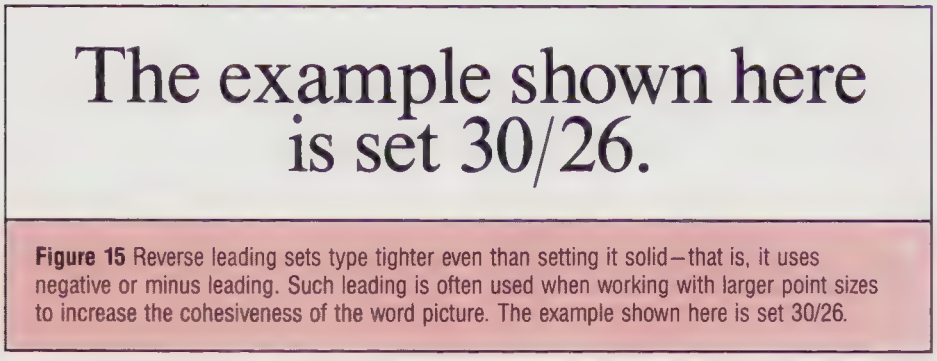


Figure 15 Reverse leading sets type tighter even than setting it solid—that is, it uses negative or minus leading. Such leading is often used when working with larger point sizes to increase the cohesiveness of the word picture. The example shown here is set 30/26.

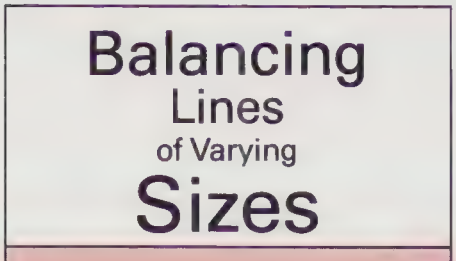


Figure 16 Use this rule of thumb when balancing white space between lines of differing point sizes: Add one-third of the point size of the upper line to two-thirds of the point size of the next line. This creates lines of type which are optically equidistant.

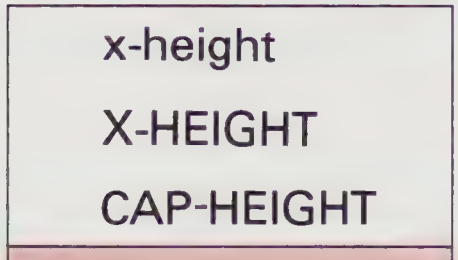


Figure 17 Hyphens and dashes are often selectively leaded. They are normally designed to center on the x-height. When uppercase characters must be hyphenated, try raising the hyphens (or dashes) to center on the cap height.

sizes because it can greatly enhance the overall cohesiveness of the word picture. Bear in mind, however, that reverse leading is not recommended for body copy because it can hinder the reader's line recognition. (See Figure 15.)

The main problem posed by reverse leading is that descenders sometimes crash into the ascenders of the next line, but this can often be solved by making adjustments to horizontal spacing so problem characters do not align vertically.

OPTICAL LEADING When setting multi-line display type in which the point sizes of subsequent lines are different, it is important to optically balance the white space between lines. Failure to do so is a common mistake. The trick is to calculate how much white space will fall between the bottom of each line and the top of the next line, rather than the baseline-to-baseline leading. As a rule of thumb, to figure out the correct leading between lines, add one-third of the point size of the upper line (i.e. the depth of the descenders) to two-thirds of the point size of the next line (i.e., the cap or ascender height). This allows enough space so that the various lines do not crash into each other and ensures that all leading will be optically equidistant. (See Figure 16.)

Note, however, that this general rule is only a beginning. Additional calculation may be required depending on the context and the typeface used. When combining headlines with body copy, a similar process of optical leading is recommended, in order to achieve overall balance.

SPECIAL CASES So far, this section has detailed uniform changes to vertical space. There are, however, several special cases when selective adjustment to leading may be required around particular characters within a line. This process of selective internal leading corresponds to the process of kerning when working with horizontal space. Hyphens, dashes, parentheses, brackets and braces are the most common characters to be selectively leaded. Hyphens and dashes are normally designed to center on the x-height. In situations where uppercase characters must be hyphenated, raising the hyphens to center on the cap-height is recommended. The same applies to dashes. (See Figure 17.)

Parentheses, brackets and braces are designed to enclose the entire point size, including descenders. In situations where only uppercase characters or figures must be enclosed, raising the parentheses to center just on the cap height is recommended. The same applies to brackets and braces. (See Figure 18.)

In situations where both upper- and lowercase characters in a block of copy must be hyphenated, separated or enclosed by dashes, convention dictates that the standard, font-supplied internal leading be used.

Bullets are round black dots used to highlight points in a list. They are normally designed to center on the cap-height, but when followed by lowercase characters, they look better centered on the x-height. (See Figure 19.) Bullets may be replaced with boxes or other typographic ornaments. In such cases, care should be taken to make sure the symbol is vertically centered on the line, relative to the following character. Again, in situations of mixed use, convention dictates the use of font-supplied internal leading.

COPYFITTING Sometimes copy must fill a particular depth, and this fit is more important than the point size or leading. Copyfitting, or vertical justification, is the process of adjusting all vertical space proportionally in order to achieve the desired depth. This process may require the use of nonstandard specifications. While it is virtually impossible for the naked eye to perceive changes of less than one point, the ability of digital typesetting equipment to handle nonstandard point sizes and leading (such as 13.5/14.2) will make vertical justification of copy much easier.

THE BIG PICTURE

You may find some or all of the suggestions in this article helpful in your work, but the key to successful and aesthetically pleasing typeset copy is developing your own eye. Approach each new problem area in your type on a case-by-case basis. Use your own optical judgment, then select and combine horizontal and vertical positioning to achieve the proper "word picture."■

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(total point size) (TOTAL POINT SIZE)

(CAP HEIGHT)

Figure 18 Parentheses, brackets and braces are designed to enclose the entire point size, including descenders. However, when only uppercase letters will be used, each of these enclosing devices should be raised to center on the cap height.

BULLETS • CENTERED • ON • CAP HEIGHT
bullets • centered • on • x height

BULLETS • CENTERED • ON • X HEIGHT
WITH • UPPERCASE • LETTERS

bullets • centered • on • cap height
with • lowercase • characters

Figure 19 Bullets are normally designed to center on the cap height, but when they are followed by lowercase letters, they should be centered on the x-height

Citizen's Search For Print Perfection

Learn how Lintas: New York called on Image Design and the Quantel Graphic Paintbox to improve its award-winning Citizen watch ads with considerable time savings.

By Patrick McDonnell

The two-year campaign created by Lintas for Noblia's Citizen watches was already an incredible success. The series of print ads depicting painted hands in the shape of animals was wildly creative, and it sold the product. But there was a slight problem.

While the whole made an impact with its vibrant color and fanciful, sleight-of-hand imagery, the client felt there was lack of definition in its watches, a serious enough charge to warrant an informal agency investigation into how the ads were produced.

BEGINNING WITH THE CONCEPT

Lintas has handled the account since early 1986 when it sold Citizen on the idea of animal hands. The concept was the brainchild of Lintas Art Director Bruce Arendash and Copywriter Michael Jordan, who felt that if consumers buy expensive watches to make a fashion statement—to stand out from the crowd—then an ad to sell the watches must do the same. Depicting watches on the wrists of posed and elegantly painted hands would reinforce the fashion statement and certainly stand out from run-of-the-mill watch ads.

The agency has since received a number of awards for the campaign, and both the retailer and consumer response has been excellent. The only nagging problem was how to get better definition, especially in the watches.

Lintas Production Manager, Ed Stevens, whose job it is to get the best possible reproduction from artwork, took on the role of detective. "When I first got here a year ago, we were just finishing up last year's printing, and the client had a fairly negative reaction to it. Basically, they were blaming the printing. But my investigation brought me all the way back to the very beginning. On the previous cam-

Citizen's Sleight-of-Hand These recent ads for Noblia's Citizen watches were photographed, scanned into the Graphic Paintbox and perfected on screen. In some ads, the Paintbox was used to create added imagery and in other cases to retouch areas.

paigns, we were using conventional strip dyes (dye transfers) and conventional retouching, and I felt that by moving one step away from the original we were losing the sharpness and detail."

While Arendash realized that the dye transfers he was using to assemble the chromes were, at times, too soft, he thought it was an excellent medium. And at the time he knew of no other that could give him better results. He originally chose dry transfers for the project because they produced sharper printed images than using only the transparencies, and the surface was retouchable. "There are levels of dyes that can be bleached out, changed or intensified, making it a very workable surface," says the art director.

With these considerations in mind, Stevens investigated a number of different digital color electronic prepress systems (CEPS): Hell Chromacom, Scitex, and the Quantel Graphic Paintbox. "My feeling was that the Graphic Paintbox was the best way to do this particular job," explains Stevens. "What we were looking for here was to be able to create special ef-

fects that did not exist. While the other systems have their strengths, they cannot create something that is not there, and that is what we were looking for."

When Stevens took Arendash to Creative Imaging Design Systems, Inc. (also known as Image Design), a New York-based computer illustration studio specializing in retouching and special effects, to show him the CEPS machines, he, too, was impressed with the Graphic Paintbox's potential for the Citizen campaign. As a comparison test, he gave Image Design artists a chrome from last year's campaign and asked them to create a new chrome on the Paintbox. The results sold him on using the computer for the 1988 campaign.

Initially, however, Arendash did have some concerns. "I was just a little worried because it is something that I had not done before. But I figured, although it might have certain differences, it could have something else to offer. I was willing to take a chance on it." If it did not work, the art director knew he had several other options: He could get a chrome output on the computer and have it retouched, or turn it into a dye transfer and retouch that as he had done in the past.

Although impressed with the initial test, it was what Arendash learned as he proceeded on this new path that made him a true believer. "From an art director's point of view, what the computer allowed me to do was to make these things a little more complex because I had the freedom to move things around. When I had done a dye, for example, I was locked in to the layout. Once I had my elements put together and rolled in the dye, I wasn't able to move anything around."

When Arendash creates an ad, he first does a C-print comp, what he calls his bible for the dye to be made. With the Paintbox, he also does a C-print comp, but when the elements are input on the screen, he can still make adjustments.

GRAPHIC PAINTBOX

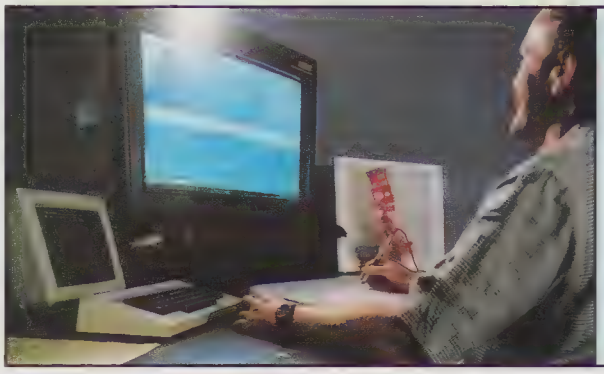
Indeed, one of the most flexible and important parts of Image Design's network of CEPS machines is its Quantel Graphic Paintbox, says Phillip Heffernan, the company's director of computer services. Paintbox's High Definition Television (HDTV) monitor and pressure-sensitive stylus are the two most obvious differences between it and other CEPS machines, which use low resolution monitors and a hockey puck/mouse input device.

The not-so-obvious difference is that the Quantel Graphic Paintbox is the next step forward in CEPS machines; it can create artwork from scratch.

"The Paintbox is not an intermediate pre-visualizer," says Heffernan, "but an artistic instrument which generates continuous tone art or film by interfacing with any of the three major scanners (Hell, Crosfield, Dainippon)." The company believes the Paintbox can be used for more than just photomontages, special effects, retouching or pre-visualization. Adds Heffernan: "In essence, it is a new artistic medium."

1 Makeup artist Michael Thomas created the animal faces on the model's hands using acrylic paints. Each painting session took between three and four hours. The photography was shot by Andrew Unangst. The plastic wrap that acts as the water was later enhanced on the Graphic Paintbox. (Photo by Peter Serling/ People Weekly © 1988 Time, Inc.)

2 For the whale ad, Arendash ordered colored prints of Unangst's work and cut them up into a collage. This served as a map to guide Paintbox artist David Rickerd. Following the photo collage, Rickerd sized the nine transparencies which were then scanned onto magnetic tapes and input into the Graphic Paintbox.



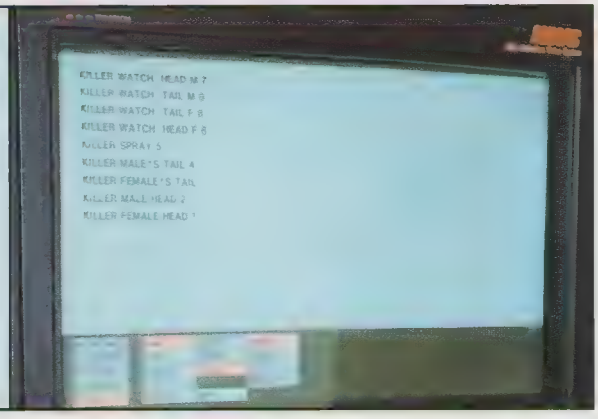
3 One of Rickerd's initial steps was to place the cutout of the sky into position with the water. The background mountain—actually a sheet of cut paper—was duplicated and placed into position over the existing background to create the illusion of a mountain range.

Photos by Image Design, Inc.

4 All of the separate cutouts are stored in the Graphic Paintbox's library and can be viewed together using the browse function. The red background is traditional for cutout images. Each time a cutout is made, a Paintbox artist has created the cutout image, a negative and positive frisket of the cutout, and an overlay.

5 Working with a cutout of the tail, Rickerd adds to the wrists to elongate them slightly. This is done in the paint mode. Once he is finished, he will place the tails back into position. This is possible because the Paintbox is not an intermediate pre-visualizer but an artistic instrument which generates continuous tone art.

6 In addition to being able to visually browse each image stored in the library, images can be called up through their assigned title and number. This makes for easy retrieval if the Paintbox artist knows exactly which image he will be working with.


KILLER WATCH HEAD M 7
KILLER WATCH TAIL M 6
KILLER WATCH TAIL F 6
KILLER WATCH HEAD F 6
KILLER SPRAY 5
KILLER MALE'S TAIL 4
KILLER FEMALE'S TAIL
KILLER MALE HEAD 2
KILLER FEMALE HEAD 1

7 Using the comp as a guide, Rickerd called up and positioned the cutout of the whale's head into the water and sky background. Individual pictorial elements like this can be carried around on the end of a stylus and tacked down temporarily to see how they look.

Heffernan viewed Image Design's involvement in the Citizen campaign as subtle and demanding. "We have done many creative jobs from scratch, but the Citizen job was a real challenge. It required the highest resolution we have ever achieved with the Paintbox." For example, to achieve better definition in the watches, an artist was required to draw directly on the watch face, on screen, in the paint mode.

FROM HANDS TO SCREEN

The 1988 Citizen ad campaign includes four images: whales, owls, flamingos and thoroughbred race horses. (See opening spread.) Ten other animals had been used in past campaigns. The images were created as double-page spreads and would be initially printed as an eight-page sales brochure. Later, they would be used in trade publications in the same format and in consumer publications as single page ads. The layouts were planned to accommodate both formats.

THE SHOOT After the client approved layouts and roughs, the job consisted of making up, posing and shooting the hands. Each ad took one day to shoot. The hands were painted from sketches with artist's acrylic paints by makeup artist Michael Thomas. (See Figure 1.) Arendash and copywriter Michael Jordan acted as stylists in directing Thomas. On the average, the hands took between three and four hours to paint. They were lit and photographed separately by Andrew Unangst. The watches were also shot separately. In the first campaign, the hands and watches were shot together, but the team found that by shooting the watches separately and stripping them together, better definition could be achieved.

BACKGROUNDS The backgrounds were made up of no-seam film and strips of paper. They were lit for a variety of effects and shot separately. In one case (the flamingos), the paper was shot through frosted glass to achieve a watercolor effect. In another (the thoroughbreds), Unangst blurred the image to achieve the effect of motion. For the water effect in the whale shot, the painted hands were photographed against sheets of transparent paper which were lit to appear like water. Some of the backgrounds were later manipulated on screen to achieve more realistic effects. For example, water droplets at the edge of the hands for the whale ad were electronically painted, the moon and stars in the owl ad were painted on screen—and in several ads, the arms were

tended.

In all, 42 separate chromes were made for the four ads. Arendash also ordered color prints, which he cut up into a collage. This served as a map to guide Paintbox artist David Rickerd. (See Figure 2.)

SCANNING THE CHROMES Image Design scanned the Lintas chromes on a rotary laser drum scanner. John Hafey, the company's technical director, adjusted the Unsharp Masking control for chrome output instead of Cromalin dot output. Because Kodak's E6 emulsion color response is different from Cromalin's, it shows if adjustments are not made. Hafey's scanning experience at *Time* magazine and Kordet Graphics, Image Design's parent, gave him the experience needed for the job. Several scan tests were run for the benefit of the client.

INTERFACING WITH A HELL COMBISCOPE Because maximum resolution was so important for this job, especially on the watch faces, Image Design made a critical decision to interface the Paintbox to a Hell Combiscope, which has larger image storage. To do this, technicians plugged into Kordet's computer network. The Combiscope is an image manipulation CEPS system with a 300 Megabyte memory, similar to a Scitex. Compared to Paintbox's image storage of 213 millimeters by 171 millimeters, the Combiscope can store an image 640 millimeters by 640 millimeters —20 times the Paintbox's capacity.

For Image Design, the project proved to be no ordinary Paintbox job. Heffernan likens the procedure used in the campaign to working backward, from minute details to the broadest areas. "We licked the problem of high resolution needed on the watch faces first, and that determined how we proceeded with the rest of the job."

Usually an entire image is produced "in machine" with the Paintbox. However, with the link up to the Combiscope, parts of the image had to be cut up digitally and shuttled back and forth between the two systems. Heffernan compares this process to taking apart and putting back together a giant jigsaw puzzle.

To cover themselves, the technicians made a backup photocomp of the chromes. Then they stripped the watches photo-

PAINTBOX WITH GRAPHIC APPEAL

In the eyes of many, Quantel has revolutionized television graphics and has begun to change the face of print graphics as well. One of these revolutionary machines created by the British manufacturer is the Paintbox.

Both fine and graphic artists who have worked with it are fascinated. David Hockney describes working with it as, "Painting with light on glass; your medium is light itself." In graphic arts, images created on the Video Paintbox appear everyday in television news, sports and entertainment shows, as well as in commercials. Since it was introduced in 1983, over 500 video Paintboxes have been sold worldwide.

Two BBC artists, who were among the first users of the video Paintbox, reported producing more than 1,200 graphics in two days. Almost every Paintbox owner has experienced an increase in their own production, which most often results in the hiring of more graphic artists. In addition, turnaround time for TV art production has commensurately decreased. The NBC affiliate in New York has 15 machines in various departments.

In May, 1986, Quantel unveiled a high definition version of the computer to produce high resolution prints, which it calls the Graphic Paintbox. Units are priced at approximately one-half million dollars. More than thirty Graphic Paintboxes have been sold to date, mostly in Europe where it was first marketed. The success of a first machine at Electric Paint, a Los Angeles production house, resulted in the purchase of a second. Graphic Paintboxes can also be found in Chicago at Communigrafix and in New York at HBO and at Image Design, Inc., a division of Kordet.

Montage Paintbox illustration by Phil Heffernan, photographs by Dianne Blell.

WHAT IT CAN DO

The original Video Paintbox was designed as an answer to the TV graphic artist's need for an electronic art machine that could simulate conventional media such as paint, chalk, watercolor and airbrush. Add to that an electronic stencil function, the ability to cut and paste, size, store in a cut out library, as well as graphic and type modes, and the result is a device which duplicates all of the artist's traditional tools.

The Paintbox was designed from the beginning to be "artist friendly." Artists draw on a television screen via a pressure-sensitive stylus on an electronic tablet, just as one would draw with a

mechanically onto the images created on the Paintbox. This proved to be a good test image to compare against the final digital Paintbox image.

MEASURING AND STRIPPING Rickerd used the Lintas comp to place the different elements within the picture. (See Figure 3.) The hands and other chromes were then stripped in electronically using the Paintbox's cut-and-paste mode. This is probably the most time consuming of Paintbox operations because a digital mask must be created for each area that is to be cut out.

To do this, Rickerd uses the paint function to draw an accurate line around the image. He then pushes the fill button which will "lay" masking around or in the image area. An alternate method is to use the graphic mode to place blocks of mask around the image; the uncovered areas can be painted over with an electronic brush. In some critical areas, the image can be magnified for a more accurate mask—pixel by pixel. An airbrush mask can also be created with soft edges.

The Graphic Paintbox has a special overlay/stencil function which automatically turns an image into a halftone dot screen, which can be airbrushed. The stencil can be made thin or thick, depending upon the requirements. The overlay function also can be used to make a cutout. (See Figures 4, 5 and 6.) Each time a cutout is made, the Paintbox artist actually has created four distinct pieces: the cutout image, a negative and positive frisket of the cutout, and an overlay. All four pieces can be stored in the Paintbox image store library for later use.

PASTING Individual pictorial elements, like the heads and tails of the whale, were carried around on the end of the stylus and tacked down temporarily to see how they looked. When the placement was correct, they were pasted down permanently using the digital rubber cement function. (See Figures 7, 8, 9 and 10.) The mountains in the same ad were duplicated and reduced to fit.

RESTORE FUNCTION With the different elements in place, Rickerd used the blur and crisp modes to give atmospheric perspective to the background. By hitting the restore button, mistakes can be erased. This

pencil or brush. Most first-time users are disconcerted by the disembodied feeling of drawing on the tablet and seeing the result appear as if by magic on the television screen. With experience, this passes. In fact, one feels that the image is no longer created manually, but cerebrally. Of course, there is no "original" other than the digital memory of the image or the analog TV display image.

The Paintbox has other computer programs called menus, which enable artists to draw perfect straight lines, circles, ovals and rectangles. Graduated backgrounds and other special effects, such as cast shadows, embossing, mosaics and color mapping, can be created.

A simple swipe of the stylus to the right or left will call different menus up onto the television screen. Calling up the Paintbox palette allows the artist to figuratively dip the stylus into paint pans and mix colors on the mixing area. Colors can also be picked up from the image. A swipe off the screen and the artist can begin painting or call up other menus.

Another Video Paintbox ability is that of animation. Areas of an image can be turned into cyclic animations such as blinking lights, explosions and so on. Simple animation of cut outs moved around "on air" or during taping can be effective. Linked with Harry, Quantel's digital editing and storage system, more elaborate cel animations can be created. One day, the Paintbox may replace cels and cel paint in animation studios.

Both the video and graphic versions also have sophisticated text-making ability. All the Paintbox special effects can be used with the text.

The Graphic version of the Paintbox retains the "artist-friendly" functions of the video version. The obvious difference is the High Definition Television (HDTV) monitor similar to a 35mm rear projection. Because the graphic version deals with more pixel information to assure high quality output, more time is required to work on it. The difference is like working on a small watercolor and a large oil painting.

When and if broadcast HDTV becomes a reality, the Graphic Paintbox, which has an HDTV monitor and can input and output HDTV graphics, will be there. Already HDTV production houses like Captain Video/1125 and Rebo are producing TV ads, programs and full-length films using HDTV.

Quantel's parent company, UEI, has recently purchased Miles 33, the world's leading supplier of Electronic Composition and Publishing Systems. It is now possible to output type layout information automatically from the Graphic Paintbox to the Miles 33 System 400 for entry of final text, hyphenation, justification and filmmaking. On the input side, Quantel has just introduced EPIC (Electronic Photographic Input Camera), the equivalent to a 150 ASA 35mm SLR camera with 1,125 lines of resolution. Combining the ease of use of a 35mm SLR, EPIC produces "instant" images which can be input into the Graphic Paintbox instead of scanning in chromes.

It is obvious that the creation and production of artwork is fusing into one unique system. The end result with such a system seems to point to faster turnaround time, quality assurance and, one hopes, a much-improved bottom line.

Electronic Paint Paintbox illustration, "Winter Squash," by Phil Heffernan.

gives the Paintbox artist the versatility to try many different approaches until the correct one is found. It also prevents original artwork from being destroyed. This fact has prompted a standard joke among Paintbox artists: "No more coffee spill overtime jobs." The only worry is that "digital monsters"—the forgetfulness of the operator—will destroy an image which has not been permanently stored in the Paintbox's hard image storage memory library. This function is called image archiving.

Editor's Note: The author suggested to Quantel that the manufacturers put safeguards into the Paintbox system to prevent these losses. Now, when an artist inadvertantly hits the wrong button, a "confirm" command appears.

PIXEL-BY-PIXEL RETOUCHING Some of the detailed touch-up was done on the watch faces at very high resolution, pixel by pixel. (See Figure 11.) Highlights were added to the diamonds to make them sparkle and details were strengthened.

PAINTING As a result of the heavy layers of paint, the hands became very textured, so much so that certain areas had to be smoothed out. For this retouching job, Rickerd used the Paintbox's electronic brushes in conjunction with paint, pastel, watercolor or airbrush modes. (See Figures 12 and 13.) In some areas, he even repainted the hand makeup. With the Paintbox frisket, soft- or hard-edged masks can be made, and the airbrush function can be programmed to spray at a certain percentage. Even detailed airbrushing that is normally sent to a retoucher can be accomplished on the machine. One of the most exciting functions is what is referred to as the infallible airbrush. If an artist oversprays, the restore button will call up the original image and the artist can try again.

PROOFS

SOFT (HDTV) PROOF As Rickerd finished up the job, Arendash was called in to proof the images on screen. The art director says he was impressed by the clarity of the images as they appeared on screen and found proofing easier because he could get as close as possible to the original images. The High Definition Television (HDTV) screen does not have the coarseness of other CEPS systems' screens, and for good reason: HDTV screens display four times more information than normal television screens, making them close to 35mm film resolution.

To mark up his corrections, Arendash

8 The formats for the ads were conceived as both spreads and single page ads. A portion of each image overlaps the next. So when Rickerd wants to work on the left panel, he must move the overlapped portion on the right side over to the other side. Here, he worked on the water that overlapped onto each image.

9 Once the hands were positioned in the water, Rickerd's next step was to place the cutouts of the watches onto the wrists. In this photo, Rickerd is moving the watch down from the upper left corner onto the wrist.

10 Once the watches were placed on the wrists, Rickerd browsed the images in the library, those with and without watches, so he could compare them. Eventually, images with and without watches were generated.

11 Since a sharp reproduction of the watches was of the utmost concern to the client, Rickerd magnified the watch face so he could retouch the diamonds and clean up muddy areas. The bottom of the screen shows the color palette he is using for airbrushing. He chooses a color and sprays and mixes in the white mixing area.

simply took the Paintbox stylus in hand and marked directly on screen those places that needed more work. (See Figure 14.) (Image Design has since installed a thermoproofer for hard copy proofs.)

The corrections were then stored into the Paintbox image store memory. By using the system's overlay function, Rickerd could flip back and forth from the correction mark ups to the image to make the changes.

FINAL PROOF The final proofs were output via the Hell Color Proof Recorder onto 11 x 14-inch E6 Ektachromes. Image Design calls these chromes Digital Originals, a trademark name which company officials coined.

Two versions were output: One with the watches for the American market, and one without watches for the Japanese market. (The Japanese planned to strip in other watch models.) The second version was requested late in production, and was only possible because of the technology.

"At the last minute the client asked us for the artwork without the watches and we were able to accomplish that in one week's time while maintaining the quality of the work," explains Production Manager Ed Stevens. "To do that conventionally with dyes, we would have had to start all over again."

TEST COMPARISON To test the work that had been done on the Paintbox, Image Design personnel compared the backup photocomps with the digital originals. The Paintbox chromes revealed much higher resolution.

CLIENT REACTION

When Image Design delivered the chromes to Lintas, Arendash and Stevens first examined the work, then took out their loupes, pored over the chromes, and declared their experiment a success. For Arendash, the Paintbox chromes "had more clarity and were richer and sharper than the images from the previous year's ad campaign." For Stevens, who had suggested using the Paintbox, the chromes represented better, and in the long run, less expensive artwork. Although the up-front cost was 15 percent higher than dye transfers, a considerable savings was realized because a better product was produced two weeks faster.

Noblia was also delighted with the end result. "The client was pleased with the work for three basic reasons," says Stevens. "The quality of the product was far superior than last year's; the timing was much faster—we were able to meet a deadline for a sales meeting in Basel, Switzerland that wasn't met last year; and we came in on budget. Last year we were over budget. We actually ended up saving about two weeks production time, which represented a considerable savings."

Following client approval, the Combiscope was used to produce color separations set up for sheet press reproduction on a Kordet six-color Heidelberg offset press. Body copy was stripped in separately. The print run totaled 50,000 eight-page booklets.

Reviewing his experience with the Paintbox, Arendash says the tool has the potential of giving the art director more freedom to juxtapose images. "It is great to know that they can do almost anything you want. It gives you more control, but at the same time, you are tempted to doodle on the machine for hours. The final image still depends on the talent of the art director. And, yes, I would use it again. ■

12 To help make the image more realistic, Rickerd painted splashes and droplets onto the edges of the wrist where they appear to be emerging from the water. Using the paint function, he also painted in lighter areas to make the water more transparent. Color was mixed by picking up blue from the water and adding white.

13 As a final touch, the artist added shadows in the water that in reality would be cast by the hands. This was done with the Paintbox's airbrush. He can make the shadows lighter or darker with the Paintbox's shade up or shade down functions. The airbrush spray is controlled by both the pressure of the stylus and a force function on the palette.

14 As Rickerd finished the job, Arendash was called in to proof the images on screen. To mark corrections, the art director simply took the Paintbox stylus in hand and wrote his corrections on the tablet so they appeared on screen. The corrections were then stored into the system's memory so Rickerd could later make the corrections.

Patrick McDonnell is a medical illustrator who occasionally writes about graphic arts.

Reebok and The Athletic Airbrush

Bryan Robley creates a cycling poster for Reebok using traditional airbrush and dazzling freehand techniques.

Bryan Robley's career was going downhill; and as a professional skier, he loved it. Like all professional athletes, he knew that the best equipment fostered the purest performance. So when the opportunity to paint a ski poster arose, Robley returned to his original career as an artist and took with him a penchant for his subject matter, athletes, and a passion for accurately depicting top-of-the-line equipment.

Today, Robley's work is usually showcased in poster form. But not long ago, his poster of a UCLA basketball player was "muralized" on the side of a building in Kansas City. (See sidebar.) He works with many teams—the L.A. Lakers are his favorite—and has several corporate sponsorships; Reebok was one of his first.

PROJECT PARAMETERS & PLANNING

Recently, *Step-By-Step Graphics* followed Robley as he created a cyclist poster for Reebok.

"Cycling is already a popular sport, but nobody knows of Reebok as being involved in that area. They've never seen us there because we're in a different marketing channel," says Mal Hetzer, CEO of Mal Hetzer and Associates, the Reebok sales agency for California, Arizona, Nevada and Hawaii. As Reebok enters the arena of cycling shoes, Bryan Robley was chosen to create the image because he had successfully done so before with other Reebok products.

"Not only are we trying to create a lifestyle impression, but one that sinks in," explains Hetzer. "It's very subtle the way Robley presents the product; it sinks in that if I want to do that, I should do it with those products. If you're going to win the marketplace over, the better the painting , the better the outcome. Like the old saying, a picture's worth 1,000 words."

Reebok decides which product will be in the poster, and the rest of the parameters are set by Robley himself. He decides on the poster's size, palette and presentation of the product. He also works directly with the color separator and lithographer when printing the poster.

OBTAINING EQUIPMENT Some people might call Robley a nitpicker when it comes to detail, but he finds inaccuracy offensive. "You can never assume you know the way something is constructed," says Robley. "If you start doing that, you're going to make a fool out of yourself from a technical standpoint." Robley even shuns photographic reference for equipment. Any item to be represented—be it a football helmet, shoe, aerobics leotard, hockey equipment or team uniform—must be in front of him before he begins. "If you rely on a magazine scrap for product reference, you're going to mistake a shadow or photographic distortion for reality," he cautions.

Since Reebok does not make bicycles, Robley was left to his own devices to obtain the cycling equipment. He called Campagnolo, one of the world's foremost makers of cycling equipment and components. "Because it is a cycling poster, and because it is Reebok's entry into a new field, my feeling was that I should group the shoe with the state-of-the-art equipment to have that absolute, futuristic, best-quality air about it," says Robley, who, after talking about the project with Campagnolo, obtained their best equipment. Robley has to be careful about too many products jockeying for attention, like "an Indy 500 car situation," so non-Reebok products have to be toned down slightly.

SKETCH

Equipment on hand, Robley makes a thumbnail sketch to work out negative space and design characteristics of the illustration. (See Figure 1.) Since the artist's thumbnails are sometimes done on the back of a cocktail napkin or in the pages of his daily planner, he usually carries around a Pentel mechanical pencil (.000, 3mm HB lead) for the small sketches. Eventually, he works the thumbnail up to 12- or 16-inches using a Pentel .05 mechanical pencil, tightening the sketch as he goes along. Robley's pace is so furious that before he started using mechanical pencils, he went through eight to 12 regular pencils a day. Morilla Super C tracing

paper is his preferred sketch surface because of its translucency—essential for the detailed overlays he makes later.

Robley must enlarge his sketch in thirds because the image area of his "ancient" Lucigraph is only 24 inches long. (The final size of the poster is 40 x 20-inches.) Two more tissue overlay refinements are made before the sketch is in complete "skeletal form." (See Figure 2.)

HUMAN REFERENCE Unlike his approach to equipment reference, Robley never works from live models to portray his athletes: Instead, he prefers to borrow an elbow from one photo reference, a leg from another, and so on. (See Figure 3.)

That does not mean that Robley is careless about anatomy; the finely rippled veins and intertwined musculature of his subjects are gleaned from anatomy books and *Muscle and Fitness* magazine.

"Obviously, I'm not painting body builders, but when you look at those photos, the muscles are clearly defined and there's no question how a bicep ties into a deltoid. And since they're so vascular, it's easy to plot the course of veins," explains Robley. "Each individual is completely unique, so there's no roadmap for how you should work on a leg."

Details of the body components and equipment are then done on separate pieces of tracing paper for each element. This allows Robley to play around

Active Airbrush Bryan Robley created this poster to promote Reebok's involvement in cycling gear.

proportion. (For example, hands and feet are made slightly larger than normal to better display products.) These tissues are taped into place, and Robley fills in the blank areas where one component connects to another. This piece needed many more tissues than usual to accommodate the bicycle's technical components like the seat, frame and wheels.

The human element molded to Robley's satisfaction, a final overlay of the entire sketch is made—using the .05 pencil and Morilla Super C paper—to include all components. This yields the final drawing which is blueprinted by an architectural service and sent to the client. (See Figure 4.)

AIRBRUSH PREP

Burnishing and pulling up the frisket are the most nerve-wracking parts of his transfer process, Robley says, and this is where the serious airbrushing begins.

FRISKET Using low-tack, matte finish FriskFilm frisket, he burnishes the frisket on top of the drawing, face down, carefully pulls it off and lays it tack-side-down on Crescent 100 illustration board. (See Figure 5.) It may sound easy, but according to Robley, it is a two-person job, and wife Robin is usually recruited to assist.

"Once I've burnished the frisket onto the tissue drawing, I'm lifting a great percentage of graphite off of the tracing paper. If I'm sloppy when peeling it off or if the frisket suddenly folds on itself, it's ruined. I have to completely redraw the tissue and could lose a day of work," says Robley.

The tissue is then placed on top of the frisketed board so that it matches identically. Robley tapes it into place and lays it back like a flap so that it can be pulled out of the way or flipped back into place. (See Figure 6.) This is particularly helpful when working with large areas where the frisket has been pulled up, taking the graphite with it. Robley uses the original, flapped drawing to attack these blank areas with more reference. A "garden variety" secondary transfer sheet is made from the original sketch and detail is filled in. Then the cutting stage begins.

CUTTING FRISKET The only places where Robley ever uses masks are where definite color breaks occur, like where a piece of clothing meets the flesh. The rest is done freehand. Robley spends about one-half day just cutting the masks, usually changing blades only once. The most detailed area gets the blade first, and usually, that means the face. In this illustration, though, the apparel is the most complex element because of its detailed pattern. Using a freshly bladed Ulano swivel knife, he makes shallow cuts to avoid destroying the board. (See Figure 7.) His motto for this stage is "the less cuts the better." Because Robley finds it most difficult to cut masks needing detail such as this, he tries to get them done early on, knowing fatigue or eye strain could botch the mask.

Once masks are cut, the tacky backings are reassembled and tacked to the actual illustration, grouped near their counterparts and labeled accordingly. Explains Robley: "Your brain can start doing some real strange things to you late at night,

1 Robley makes a thumbnail sketch to work out negative space and design characteristics of the illustration. Eventually, he works the thumbnail up to 12- or 16-inches using a Pentel .05 mechanical pencil and Morilla Super C tracing paper; its translucency is essential for the detailed overlays he makes later.

2 Robley's "ancient" Lucigraph enlarges the sketch, but because the plate of the Lucy is only 24 inches square, Robley must enlarge his sketch in thirds to achieve the final size (40 x 20-inches). Two more tissue overlay refinements are made before the sketch is complete in "skeletal form."

3 Robley prefers to borrow an elbow from one photo reference, a leg from another, and so on. That does not mean that Robley is careless about anatomy, though; the finely rippled veins and intertwined musculature of his subjects are gleaned from anatomy books and *Muscle and Fitness* magazine.

Photos by Dave Brandenburg

and I can waste hours trying to look for the piece that goes to that part of the puzzle." He also saves every mask until the poster is printed. Such a precautionary measure not only saves time, but prevents having to recut a mask if more work is required on that area. A new mask always runs a high risk of inaccuracy.

AIRBRUSH AND PAINTS Robley admitedly "gropes a little" when he begins painting. He uses no color comp and does no color studies. "I'm kind of developing the color and design as I go along. I just make myself keep putting paint on the board, waiting for it to show me which way to go; you can't make a mistake because if it's the wrong color you can always change it," he says, crediting time constraints for fostering this now-preferred approach.

Here, again, he prefers the most complex area as a starting point, and begins by painting the fleshtones. He uses a Paasche AB Turbo airbrush for these areas because it is capable of fine detail work, and it works well with his medium of choice: acrylics.

"I've used the AB Turbo for years," says Robley. "I'm most comfortable with it and because all the guts are external, it never clogs. This is important because I put paint down a little thick." Robley is not picky about which brand of acrylics he uses (lately, it has been Winsor & Newton), but for white, he uses Badger Air Opaque. "Most other whites are not ground fine enough," he says.

Robley always mixes his paints on styrofoam plates because they are disposable. ("There's nothing romantic about the way I mix my paints," he jokes.) He also prefers not to mix paint in quantity (with the exception of the background color), because the slight nonconformities in tone that are created by different batches of a color add to the realism of the piece; the human eye sees variance of color in everything.

FLESH TONES

Human elements like veins and muscles are the trickiest to paint. "This guy's legs and arms are very muscular, they have a lot of veins in them, and a lot of tendons are showing," relates Robley. "I'll start building the tone where the tendons show, where the muscles tie in, where the veins are, and then I'll build up slowly from there. It takes a lot longer, but then you get a more life-like painting with a lot of layers rather than a big flood-job."

Breaking his flesh tone process down into stages, he starts off with a light tone that consists of 70 percent white, 20 percent yellow ochre and 10 percent cadmium orange. (See Figure 8.) To contour the muscle, he uses a darker tone—60 percent white, 35 percent yellow ochre, a little orange and a little red. To that mixture he adds raw umber, spraying another layer; and to that he adds raw sienna. The highlights in the muscles are brought out with the first tone. (See Figure 9.)

To create the veins, Robley sprays the lightest tone—80 percent white and 10 percent each of yellow ochre and cadmium orange. He shades that with a darker tone of burnt sienna and raw umber and overpaints the area to make it more subtle. (See Figure 10.) "I don't want it to look

4 The human element molded to Robley's satisfaction, a final tissue overlay of the entire sketch is made—using the .05 pencil and Morilla Super C paper—to include all components. This yields the final drawing which is blueprinted by an architectural service and sent to the client for approval.

5 Using low-tack Frisk film, he burnishes the frisket on top of the drawing, face down, carefully peels it off and lays it tack-side-down on Crescent 100 illustration board. "If I'm sloppy when peeling it off or if the frisket suddenly folds on itself, it's ruined."

6 The master sketch tissue is then placed on top of the frisketed board so that it matches identically. Robley tapes it into place and lays it back like a flap so that it can be pulled out of the way or flipped into place. This is particularly helpful when working with large areas where the frisket has been pulled up.

like there's a worm crawling across this guy's leg," he jokes.

It takes Robley approximately three days to paint the flesh tones using 11 to 15 layers of paint. "There are so many planes to something like an arm, it takes a combination of paint mixtures and applications to achieve a realistic look," he says.

RENDERING CLOTHING

Robley shuns laying down flat color because he feels it makes the art look "cheap and factory produced." Instead, he builds up color and contour.

PANTS For example, in the cycling pants, a good portion is going to be black. Rather than mask it off and lay down a big black area, Robley contours it from the sides, using Payne's gray, and slowly starts building up the color in layers, working dark to light, light to dark. (See Figure 11.) The palette for the pants consists of white, thalo blue, Payne's gray, dioxazine purple, violet, ultramarine blue, cadmium orange, Grumbacher red, cadmium red and medium red.

JERSEY Robley used the same technique to create the cyclist's jersey. The palette here consists of white, Turner's yellow, raw sienna, yellow ochre, cadmium yellow light, hansa yellow and cadmium yellow medium. For the folds in a garment, Robley works freehand and concentrates on color gradation. "When you look at a garment and the folds in it, those are not harsh folds you could do with a frisket," explains Robley. (See Figure 12.)

More paint is added to achieve shaded areas rather than let the lighter paint coverage be the highlight. "I work light to dark and then I work dark to light, going back and forth constantly to get a lot of paint on," he says, estimating that six or seven repetitions are necessary to get the desired result.

RENDERING THE SHOE

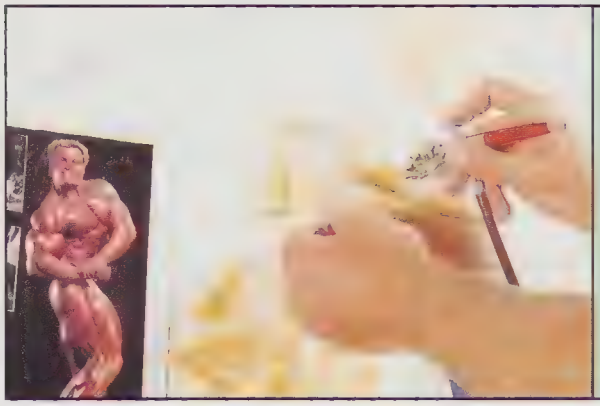
Shoes are Robley's favorite subjects to paint. In preparation, he positions a lamp directly over the shoe to observe shadows that will enhance the pattern of the shoe. On shoes and seams, Robley shifts the masks to leave a $\frac{1}{16}$- to $\frac{1}{22}$-inch opening and sprays a light gray in the open area to reveal edges on leather or fabric. (See Figure 13.)

NYLON The shoe in this poster is a black nylon weave with dual stitched leather. To create the nylon weave, Robley uses his .000 pencil to draw in the pattern. With

7 Robley spends about one-half day just cutting the masks, usually changing blades only once. The most detailed area gets the blade first. In this illustration, the apparel is the most complex element because of its detailed pattern. Using a Ulano swivel knife, he makes shallow cuts.

8 Robley uses a Paasche AB Turbo airbrush for flesh tones because it is capable of fine detail work, and it works well with his medium of choice: acrylic. He starts off with a light tone that consists of 70 percent white, 20 percent yellow ochre and 10 percent cadmium orange.

9 To contour the muscle, he uses a darker tone—60 percent white, 35 percent yellow ochre, a little orange and a little red. To that mixture he adds raw umber, spraying another layer; and to that he adds raw sienna. The highlights in the muscles are brought out with the first tone.



10 For the veins, Robley sprays the lightest tone—80 percent white and 10 percent each of yellow ochre and cadmium orange. He shades that with a darker tone of burnt sienna and raw umber and overpaints the area to make it more subtle.

11 A good portion of the cycling pants is going to be black. But rather than mask it off and lay down a large black area, Robley contours from the sides, using Payne's gray; then he starts building up the color in layers, working dark to light, light to dark.

12 The palette for the jersey consists of white, Turner's yellow, raw sienna, yellow ochre, cadmium yellow light, hansa yellow and cadmium yellow medium. For the folds in a garment, Robley works freehand and concentrates on color gradation.

13 Shoes are Robley's favorite subjects to paint. He positions a lamp over the shoe to observe shadows that will enhance the pattern of the shoe. On shoes and seams, Robley shifts the masks to leave a 1/16- to 1/22-inch opening and sprays a light gray in the open area to reveal edges on leather or fabric.

14 To create the nylon weave in the shoe, Robley uses his .000 pencil to draw in the weave pattern. With a very clean needle and gun, he creates a "pinpoint" pattern, darkening the tone with dark Payne's gray and hitting the highlights of the weave pattern with a lighter tone of gray.

a very clean needle and gun, he creates a "pinpoint" pattern, darkening the tone with dark Payne's gray and hitting the highlights of the weave pattern with a lighter tone of gray. (See Figure 14.) He uses the same palette for the shoe that he did for the pants, layering and building up color until it appears black. "By the time I'm finished, the pencil will be completely covered, and that pocked, woven surface of nylon is created," he explains.

LEATHER The leather is created using the same basic painting technique, but to avoid the "crater" look of nylon, the pinpoints are made into longer, softly angled lines where there is a stitch in the shoe. (See Figure 15.) "Leather is skin, but it's not smooth. There are always stress lines and mini-folds and ridges wherever there's a stitch. That's what you see; you don't see the basketball-texture pattern," says Robley. The Reebok logo and reflective stripes on the shoe can only be done with a special ink run of metallic silver when the poster is printed. In the meantime, Robley used a light gray to represent the effect.

SOCK Robley uses his Pentel .05 mechanical drawing pencil to draw in the weave pattern of the sock. From light to dark, dark to light and back, he builds up over that with airbrush. The palette for the socks included Payne's gray, white, thalo blue and purple. (See Figure 16.) This process can take up to four hours.

BACKGROUND PAINTING

Robley gets a real charge out of painting the background. "I turn into a wildman practically—the adrenaline really gets pumping," he says. There is a method to his madness, however.

An entire day is planned around the background, and Robley summarizes his process this way: "I want to lay the frisket down, cut it, peel up the background areas, then spray it and get that frisket off ASAP. I never let it sit overnight." Robley takes the most health precautions here and always wears a safety mask, has a ceiling fan spinning, windows open, and even goes so far as to lock the door to his studio to prevent others from entering.

The background colors are prepared first. This is the only time Robley mixes quantities of paint. For this particular poster, the background will be green, and according to Robley, it is one of the most difficult colors to paint; it cannot be lightened with overpainting like a

(Continued

THE SPORTING LIFE

Bryan Robley was tired of the metropolitan life Los Angeles offered in the 1970s, so he packed up his "semi-established" career as a freelance art director/illustrator/designer and headed for California's mountains to pursue a different line of work—professional skiing. It was Robley's experience of skiing for different corporations that taught him the benefits of corporate sponsorships and, ironically, it was his profession as a skier that led to his first big break as an artist.

While skiing in Sun Valley, Idaho, under the sponsorship of Salomon ski boots, Robley lunched with one of Salomon's marketing reps. "We were kicking around ideas about how to introduce a new generation of ski products to the dealers. Some suggestions were personalized ice scrapers, coffee mugs with the shop's name on it—fun stuff like that. I suggested a limited edition print, and I convinced them to let me do the project," says Robley, still somewhat bewildered at this good fortune. The 1,500 signed, limited edition prints were a giant success, and Robley signed an exclusive contract with Salomon.

From this poster came Robley's second big job. One of the Salomon prints ended up in a gallery in Salt Lake City, where Reebok's Mal Hetzer saw it. At that time, Reebok was such a fledgling company that Robley had not even heard of it. But he listened to Hetzer's idea for a poster series that would be given to dealers as gifts and be used to get the Reebok line off the ground. "I thought it was a pipe dream, but I liked him and decided to do it at a greatly reduced rate because he was funding it himself," says Robley, who persuaded a paper company to donate paper and a printer to print it for next to nothing. The Reebok poster was just as well-received as the Salomon poster. With another exclusive contract signed, Robley's artistic career began to snowball.

The turning point that led to all of his current corporate affiliations was Robley's third job. A friend from ABC Sports asked Robley to do a Super Bowl poster for a group of affiliate stations, but there was little or no budget allocated for the project. "I told him if he could get it cleared for me to raise the money through corporate sponsorship—just showing products that would be in a photograph anyway—that the project wouldn't cost him a dime," says Robley, who raised funds through a cleat manufacturer, and the wristband and ball company for the NFL—all of them co-sponsored the poster. Robley now creates the only Super Bowl poster issued *before* the game that portrays the two competing teams.

NCAA Finals Mural Recently, Robley's poster of a UCLA basketball player was "muralized" on the side of a building in Kansas City. (Mural by Adrem Creative, Los Angeles.)

To date, Robley has exclusive contracts with Salomon, Reebok, Chrysler/Plymouth (for this year's winter and summer Olympics) and Audi (for ski events). He also has an entourage of what he calls "orbiting" sponsors, such as Porsche, Carrera Optics, K2 skis and CB Ski Wear, who are willing to ante-up money for any poster as long as they are represented with a product in the image. "Corporate people love it because their product is represented stronger and more clearly than in a photograph," explains Robley.

Robley is even sponsored by Paasche airbrushes. "After years of being sponsored by various ski teams, it came to me that I could not go through life with one AB Turbo. So I called Paasche." In exchange for a credit line on the bottom of four posters a year, the company supplies all of Robley's gun needs and even keeps them tuned.

After the ease in which Robley obtained sponsorships, distribution of his posters was a self-proclaimed nightmare. He attempted to be his own distributor with a group of other artists, but it was more work than he realized. So Robley went searching for a poster distributor and approached Bruce McGaw in New York. Two days after McGaw received samples of Robley's work, yet another exclusive contract was signed. "They prefer exclusives," says Robley. "If they opt not to publish a piece I want published, I can go elsewhere; but I don't think that's going to happen. They're

pretty excited about my work."

To an extent, Robley's ascent in the sports poster world still baffles him. "I can appreciate the great Groucho Marx line of 'I never want to belong to a club that would have someone like me as a member,'" he laughs.

Success, although easy, did not occur overnight, however. Robley entered the world of professional art as a courtroom sketch artist after graduating from high school in 1968. He worked for the *Los Angeles Herald Examiner*. With little to do before the Robert Kennedy assasination trial, he hung out in the photo-retouching department. Equipped with a ratio of 10 guns to three retouchers, the department always had a gun to spare, and Robley started playing around, eventually using airbrush to enhance the black-and-white illustrations he did for the paper.

When he left the paper, he forgot all about the airbrush. It was not until a few years later that his interest was piqued again, as he spied a Paasche AB Turbo gathering dust in an art supply store. "It was on sale for something like $90, so I bought it, but didn't know what to do with it. I stuck it in a closet," he says.

The airbrush finally came out of the closet for the likes of Humphrey Bogart, Marilyn Monroe and W.C. Fields. The owner of a local movie house knew of Robley's artistic talents and asked him to paint life-size cutouts of the stars. Robley agreed and was determined to do them in airbrush, even though he had not touched the tool in seven or eight years. But the project was a success. "After that, I was addicted," he confesses.

While his addiction led to fame, Robley is astutely aware of the difficulty many illustrators have combining their talents and the jobs they receive. "I have just been extremely fortunate to be able to specialize in something I enjoy. Obviously, it helps that I'm a sports fan," he says.

And the perks that come with the job would make any sports fan drool. Robley gets V.I.P. treatment at such sports events as the Super Bowl, NBA Finals and L.A. Laker's home games. ("The biggest thrill in sports is a front row floor seat at the Forum across from Jack Nicholson—the game is never the same after that," laughs Robley.) Besides having some of the best seats in the house, Robley receives invitations to exclusive team events and parties, and has after-game locker room privileges.

One regular thorn in Robley's side is the constant comparison of his work to Leroy Neiman's; often, Robley must stress that the two maintain completely different, non-competing styles.

"Neiman is a marketing genius—he created the world of sports art. But as a friend of mine once said, if Neiman is the Johnny Carson of sports art, then Robley is the David Letterman."

Prowess of Precision Robley's passion for accuracy is evident in these posters.

(Continued from page 105)

Therefore, it has to be well planned. As a precautionary measure, Robley sprayed a separate board as a test.

With a palette of sap green, turquoise green, olive green, Hooker's green, light green oxide, emerald green, ultramarine blue, Payne's gray and purple, Robley starts with a medium tone (sap green) and mixes it with other colors to create four or five grades of green. (See Figure 17.) The darkest tone is almost black. It is crucial that the mixture is clean, and to ensure this, Robley mixes paint in separate jars and then strains them into clean jars. His mixtures are thinner than the paint used for the main figure because he wants the spray to be finer.

Paints aside, he peels off all of the masks and cuts the basic shape of the image out of a clean tissue. This is tacked over the painted image with tiny pieces of tape and then covered tightly with a new frisket. (See Figure 18.) This prevents the background paint from bleeding under the frisket and minimizes the chance of any pigment peeling off when the frisket is pulled.

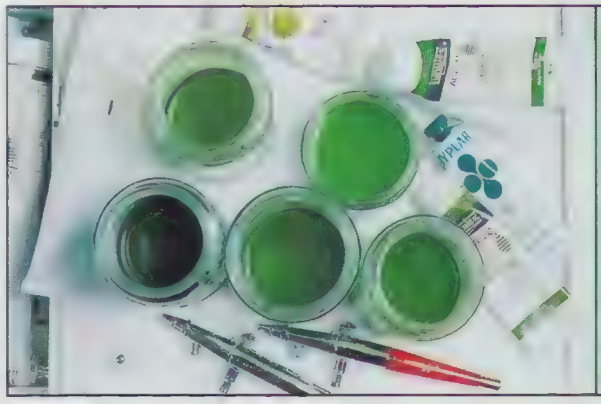
A Paasche VL airbrush with the smallest nib size is Robley's background gun of choice; the small nib gives a very fine spray. With the medium grade color, he slowly paints around the image, layering the paint very lightly to build up a seal around the edges of the frisket. (See Figure 19.) "I've got a gut feeling when it's pretty well sealed," he says. A half-hour of light layering is usually sufficient. He waits about 10 minutes for it to set and then proceeds with the remainder of the background.

He first cleans the gun, then fills it with a darker shade and works down. He cleans the gun again, and using a lighter shade, works up, continuing this flip-flop until satisfied. The entire background painting takes approximately three hours. When complete, Robley peels the frisket off as quickly as possible. (See Figures 20 and 21.)

The difficult part of this time-consuming process is the degree of color saturation absorbed by the eye, and Robley has to rely on an impartial observer (usually his wife) to discern a smooth, clean gradation. He also likes to view the background under different lighting sources; when working well into the night, Robley has been known to use the refrigerator light or the light from a television when

15 The leather is created using the same basic painting technique, but to avoid the "crater" look of nylon, the pinpoints are made into longer, softly angled lines where there is a stitch in the shoe. "Leather is skin, but it's not smooth. There are always stress lines and mini-folds and ridges wherever there's a stitch."

16 To draw in the weave pattern of the sock, Robley uses his Pentel .05 mechanical drawing pencil. From light to dark, dark to light and back, he builds up paint over that area. The palette for the socks included Payne's gray, white, thalo blue and purple. The process can take up to four hours.

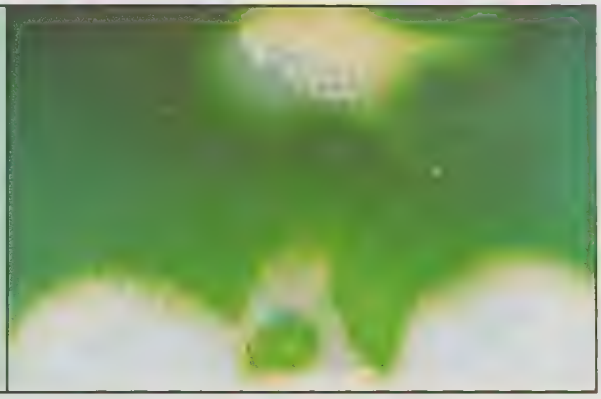


17 Robley takes special care when preparing to paint the background. Robley creates four or five grades of green. It is crucial that the mixture is clean and to ensure this, Robley mixes paint in separate jars and then strains them into clean jars. His mixtures are thinner than the paint used for the main figure for a finer spray.

18 Paints aside, Robley peels off all of the masks and cuts the shape of the image out of a clean tissue. This is tacked over the painted image with pieces of tape and covered tightly with a new frisket. This prevents paint from bleeding under and minimizes any pigment peeling off when the frisket is pulled.

19 With the medium grade color, he slowly paints around the image, layering the paint very lightly to build up a seal around the edges of the frisket. "I've got a gut feeling when it's pretty well sealed," he says. A half-hour of light layering is usually sufficient. He waits about 10 minutes for it to set and then proceeds.

20 Robley cleans his gun, fills it with a darker shade and works down. He cleans the gun again, and using a lighter shade, works up, continuing this process until satisfied. The entire background painting takes approximately three hours.



21 When he is satisfied with the color and gradation of the background, Robley likes to peel up the frisket immediately. "I never let it sit overnight," he says. Notice how clean the main image remains because the tissue under the frisket protects it.

22 Robley likes to keep the finished art for a day or two so he can stare at it. This gives him a chance to see where refinements can be added. Many of these improvements are simply added using a small paintbrush.

it is tuned to a non-channel.

In an optimum situation, Robley likes to keep the finished art for a day or two so he can stare at it. This gives him the chance to see where refinements can be added. (See Figure 22.) According to Robley, the work that can afford this luxury of time always turns out the best.

COLOR SEPARATION

Robley takes his art to Concept Color in Utah, where the reflective art is converted to an 8 x 10 transparency via the Scitex Color Response system. Robley insists on this size because it gives much better detail than a smaller transparency would. "The bigger the piece of film you're separating off of, the better quality you're going to have," says Robley, who consistently works with only one crew at the separators and one crew at the lithographers, Sun Litho.

PRINTING

He examines the separation with the lithography crew. They initially aim to hit the flesh tones on press with four colors. "We'll sacrifice everything else to get that," explains Robley. They then decide what has to be enhanced and what is going to need an extra plate. "When you're printing an art poster, you have certain limitations, especially with the kind of painting that I'm doing. It's almost fluorescent in certain areas. We usually come back in on top of the four colors with a minimum of two and sometimes four touchplates to enhance certain areas." After a press proof was pulled, it was decided that seven touchplates were needed to match the color in this poster to the original.

"That's the advantage of using a Scitex color electronic prepress system. We can mask off areas and make another plate that will come in and simply touch certain areas of the illustration with whatever custom colors we deem necessary." They also decided to print the poster double-black to enhance the shoe and give it a three-dimensional look. A typical Robley poster uses eight colors (four process and four touchplates), but this one turned out to be an 11-color job.

When the poster is finished, it is distributed to Reebok's retail sporting stores for use as a framed piece of art. Says Mal Hetzer, "It adds more impact that way and the retailers don't take it down." ■

—*Susan [illegible]*

Simulating Perspective on the Mac

How to generate convincing 3-D images without using costly and time-consuming 3-D programs.

By **Simon Tuckett**

There is a very good reason why much of the microcomputer illustration featuring depth these days looks merely isometric. It is considerably simpler to achieve a sort of pseudo-perspective. But there are ways of achieving convincing depth that do not necessarily involve a tremendous investment in time, effort or expense, and these methods are getting easier.

Even on the computer, the principles behind achieving basic perspective are much the same as always. Simple two-point perspective can be considerably easier to achieve than drawing on a drafting table. In a basic setup, you can have vanishing points at either side of the electronic drawing area. Lines can be pulled in from these points and, with one end anchored to the vanishing point, the other can be pulled around and used as quick and handy guides for subsequent lines created in perspective. This enables you to draw in incredible detail in an electronic area just two inches wide (enlarged to full screen view) while the vanishing points are some four feet on either side of the artwork. (See Figure 1.)

But this type of guidework is useful only for the most simple type of perspective work. Although the same guidelines apply to three-point perspective, here is where it begins to get complicated. So what is the next alternative?

If you want computer-aided perspective illustration, 3-D programs have been a necessary evil, at least up until now. Images are built (laboriously) on a micro with a 3-D program. Many people resort to them when trying to get a feel for a three-dimensional shape. Frequently, the wait time for the program to refresh the screen during a rotation can knock the wind out of your design sails. You begin to have doubts about the design itself.

Three-D programs are great when you are building an entire model; but for most illustrations, it often seems like overkill. You know the angle you want and you know the shape, and you would like to be able to fill in the gaps yourself.

To aid you in achieving this impression of perspective, there are several software tools on the Macintosh market now that stop short of being full-blown 3-D programs but, for their price, can go a tremendous way toward getting the effects you are after. GridMaker (Folkstone Design, Inc.) is one such program that can supply you with perspective guidelines. It is this program's simplicity which actually makes the program invaluable to any Macintosh illustrator. Visions (PiXel Software), on the other hand, takes a standard Macintosh PICT file (such as those created with MacDraw or MacDraft) and rotates it in three-dimensional space which allows for assigning groups of objects to layer at varying depths.

Convincing 3-D This cover illustration was created using a Macintosh program, GridMaker, which supplies perspective guidelines in a very simplified manner.

A COVER PROJECT

When I first came across GridMaker, I had just completed a magazine cover that employed three grids. The grids had all been rotated in a 3-D drawing program, and it had taken some time to get them looking just right.

On my next cover project, the objective was to produce an image of a registration mark in 3-D and in proper perspective. There were three alternatives: First, to wing it and try to create the ellipses in the mark by trial and error. The second alternative was to physically produce a large register mark and photograph it at the angle I wanted it to appear. Lastly, I could have built the entire image in a 3-D program and suffered the consequences of the wait times during screen refreshes. Not a pleasant option, yet this is probably the course I would have followed had I not been able to use GridMaker.

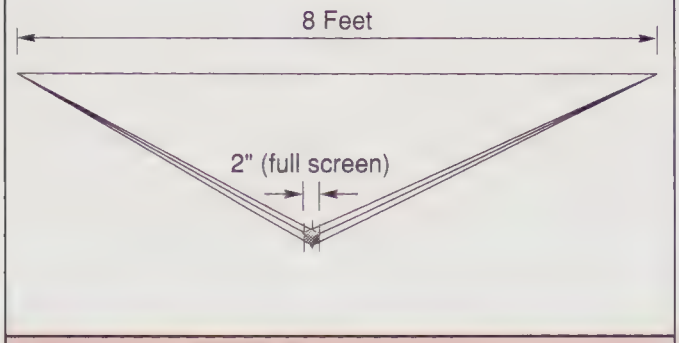
FINDING THE ANGLE The first task was to sketch out on a laser print just what the register mark should look like. Then, around the ellipse, a rough outline of an appropriately-shaped fra[me] of a grid was drawn. (See Figure 2.) In GridMaker, I replicated this as nearly as I could using a coarse square grid of 10 units height, 100 width and 100 depth, as well as a close perspective. It took about five minutes. I saved the document so th[at] I could go back to the image at that angle and get a fine gr[id] later, if necessary. (See Figure 3.)

OPENING IN ILLUSTRATOR 88 Using "DrawOver" from the Illustrator 88 package (a utility for converting Macintosh PICT files to Illustrator 88 documents), I converted the grid file to an Illustrator 88 document so that the grid would become more [than] just a template (something seen in the background). It [became] a part of the forthcoming drawing. An interesting featur[e that] shows up here is that all grids come up in the Illustrat[or]

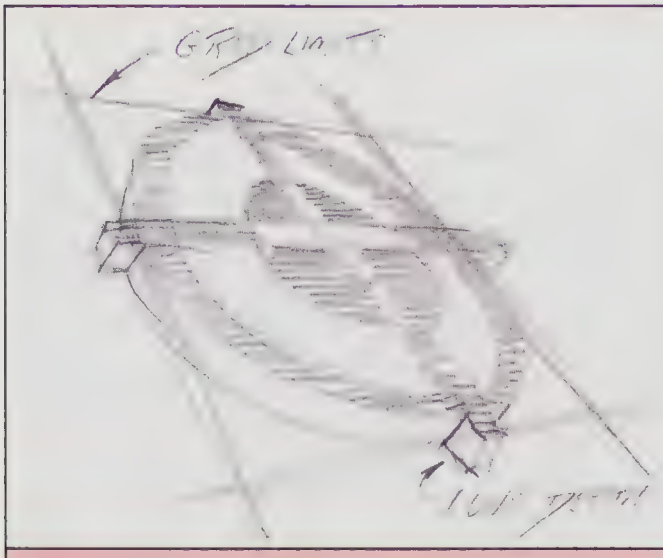
grouped as they were in the original documents. Thus you do not have to go through and selectively group the grids in each plane—they are already grouped.

Naturally, the next thing to do was to make the grid invisible in the preview mode, so the grid was selected and turned to "no outline" and "no fill." There is an important reason for opening the PICT file in Illustrator. A normal PICT file used as a template would always be in the background; however, opening up the grid and having it there as an integral part of the illustration allowed me to use the program's tools for showing and hiding parts of the grid. It made the screen image far less cluttered.

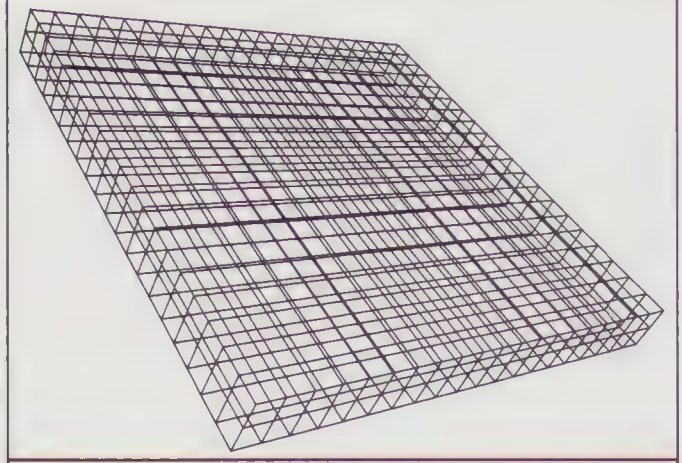
CREATING THE CIRCLES Once the attributes for the grid were set, the next stage was to hide all the grids except the top one. (In this article's illustration, the grid will remain visible for demonstration purposes.) Then a dummy grid was drawn off to the side. This was a two-dimensional version of the grid in the illustration, and it enabled me to define where the bezier control



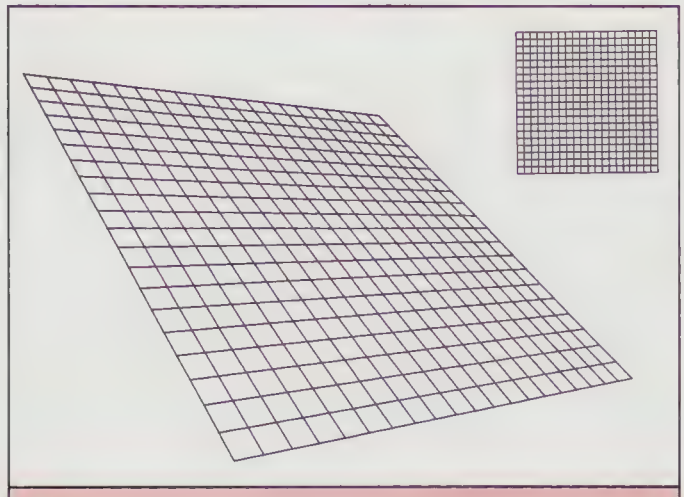
1 In this example of on-screen perspective guidelines, you see arbitrary vanishing points (8 feet apart) that can operate comfortably within a two-inch wide area.



2 First, a rough sketch was needed to get an idea of the angle – hence, the rectangle around the registration mark. This would be an important guide when creating the grid.



3 GridMaker (Folkstone Design) produced a coarse square grid measuring 100 by 100 by 10 units, which was then rotated to the desired angle and amount of perspective.



4 The two-dimensional dummy grid off to the side allows the designer to calculate the geometry necessary to create perspective circles in the main grid.

points on the circle should be placed. (See Figure 4.) It was also important to make sure that the dummy grid had exactly the same number of sections as the real thing. The center point of the dummy was determined, and a circle centered at that point was created. This was then ungrouped and an anchor point was placed at the point where the bezier control handle on one of the four curve points ends. A diagonal line to the matching bezier control point on the other side of the circle was drawn and then a copy was flipped over the vertical center line. (See Figure 5.)

As you can see in Figure 5, according to the diagonal lines (indicating the position of bezier control points on either grid's center line) the control points will always be 22.5 percent from the edge of the circle's limits, no matter how acute the grid or how small the circle. On a 20 x 20 grid, as in this case, each control point occupies four-and-one-half grid units. Similar lines were drawn on the perspective version of the grid, followed by a large, ungrouped circle. The curve points were repositioned over the center lines. (See Figure 6.) Then the control points for each of the curve points were reshaped to reflect the angle of the perspective. (See Figure 7.) They had to align with the direction of the grid angles and also be only long enough to extend as far as the diagonals. These are things that are not only difficult to do at the drafting table, but they are also remarkably difficult to achieve with any but the highest end 3-D programs.

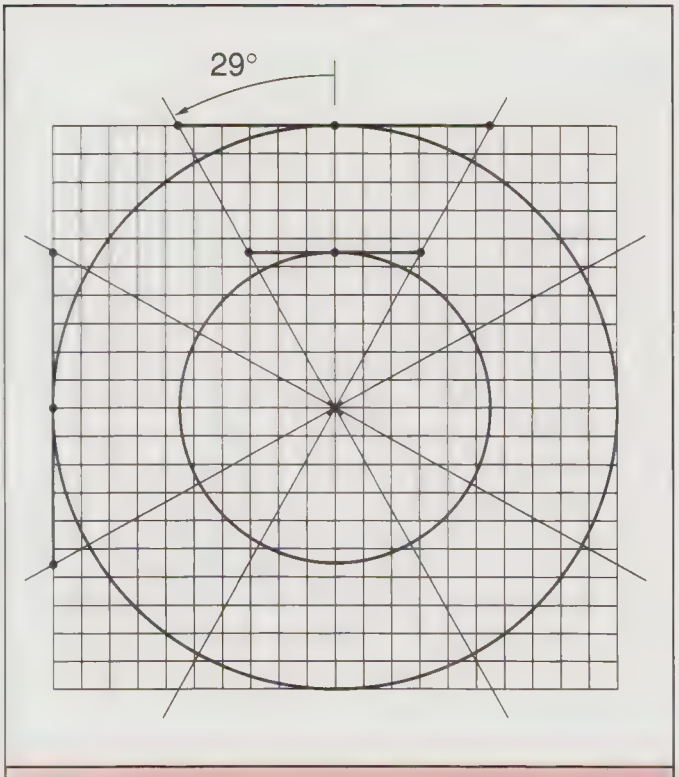
TWEAKS For the inner circles, duplicates were made of the larger outer circle. Do not be fooled into thinking, however, that you can leave them there. A smaller circle will reflect a different perspective view, so once again, each point must be modified to fit the points on the grid as well as to reach the control point diagonals. All of these modifications still took only a fraction of the time it would have taken to generate such artwork at the drafting table.

All of the artwork generated to this point was then hidden and the same procedure was followed using the bottom grid on the box. Only the outer shape was necessary here. Then the foreground surfaces were created to bring the image to the version you see in Figure 8. At this point, the grids can be removed and some graduated tints applied to some of the surfaces. In addition, some inner surfaces were generated to give the impression that the white surface was slightly lower than the black surface of the registration mark. This produced Figure 9.

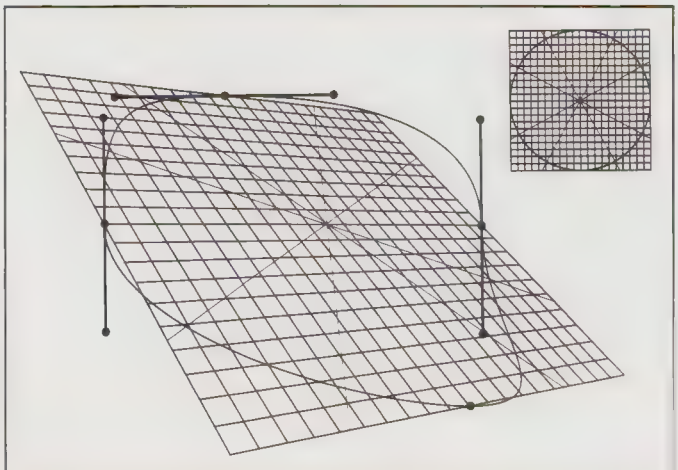
3-D DICE

Another magazine cover involved a pair of dice that I hoped would pop off the page. This was an old project which had been started some time ago in a 3-D program, but had been abandoned when the ellipses for the dots proved too weak to use even as guides. The reason for this is that 3-D programs convert circles into polygons. It gives them fixed numbers on which they can calculate point positions in three-dimensional space. Sometimes, circles end up looking more like hexagons or octagons.

To begin, GridMaker's box option was chosen. This produced a three-dimensional object displayed in as distorted a perspective as possible. From this, I took two copies, one at the coarse



5 On a 20 x 20 grid, the bezier control points for a curve that reaches the edge of the grid are 4.5 units in from the corner. From the circle's center line, that is 29 degrees. The diagonal lines provide guidelines.

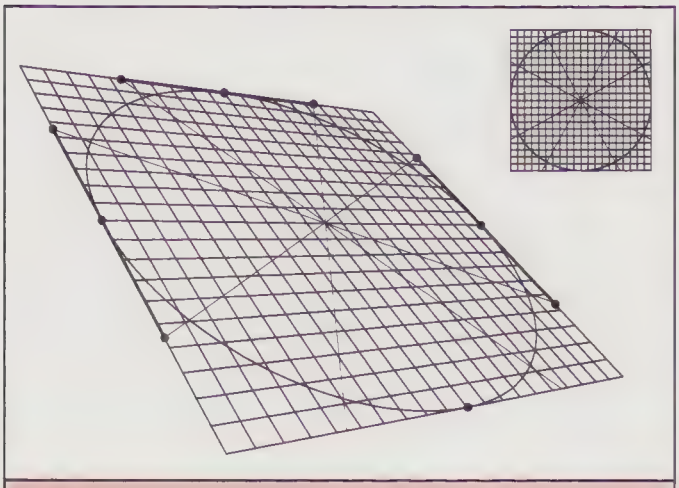


6 Beginning with an ungrouped circle, the control points are then placed on the center line on the outer limits of the grid. The next step is to match the curves to the perspective.

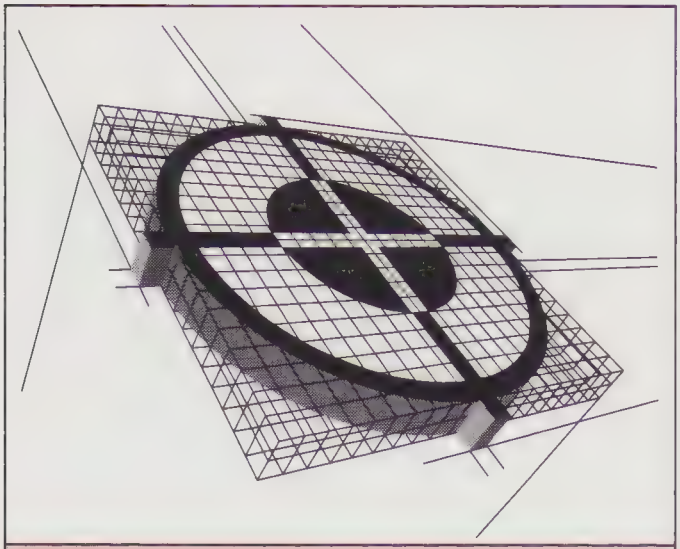
setting and one at the fine setting. (See Figure 10.)

DOUBLING UP THE GRID There were some very good reasons for taking two swipes at the grid. Though each face needed a 10 x 10 grid to support the dots that would appear, the actual shaping of those dots needed its own grid—50 by 50. Things can get pretty complicated on screen when using such a fine grid, so I opted for two: one for rough positioning of the dots; and then, in order to reshape the dots so that they reflected the current perspective, I could show the fine grid. It could then be discarded after that point. The grids for each die were married up and locked into position. Depending on the task at hand, it was possible to hide the fine grids and show the coarse ones or vice versa.

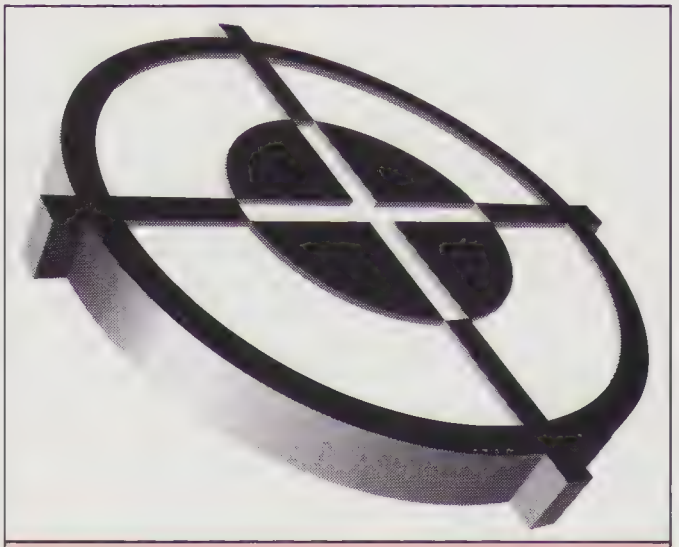
Circles and their anchor points were placed on the coarse grid



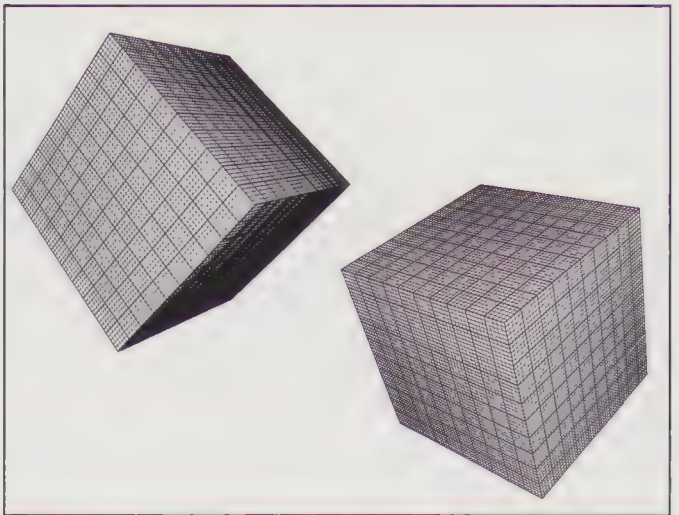
7 The second step is to align the bezier control points with the intersection of the grid lines and the diagonals. This will ensure that the curves match the grid perspective.



8 The top grid is used to create the top surface of the registration mark and the lower grid is used for the lower surface. Guide lines for additional elements run off to vanishing points.



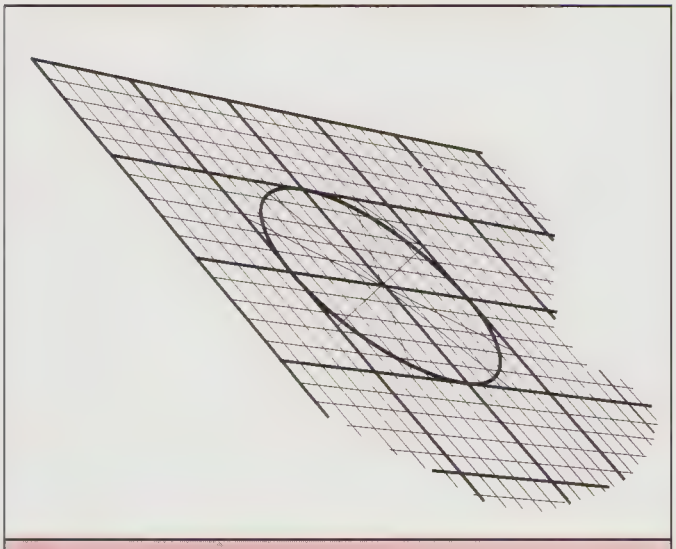
9 The finished art is shown here in its proper perspective with the grids removed. Note how simulated perspective, used for this type of application, is very convincing.



10 For the dice, GridMaker's box option was chosen. Two sets of grids were produced—one at the fine setting and one at the coarse setting (shown here combined).

and then, when all the anchor points were in their final positions, the fine grid was made visible so that the guidelines for the bezier control points on each of the arcs could be inserted. (See Figure 11.) Having placed all the control points, it was then possible to discard the fine grid and begin work on toning the surface of the dice. While rendering tone, the grid could not help me, so real dice were used. First, a screen print of the dice outline was taken and then used to whip up a few comps of the illustration in ImageStudio before creating the blends in Illustrator 88. (See Figure 12.)

For the remainder of the illustration, all the grids were removed so that I could concentrate on creating the chosen blends in four-color process. (See Figure 13.)



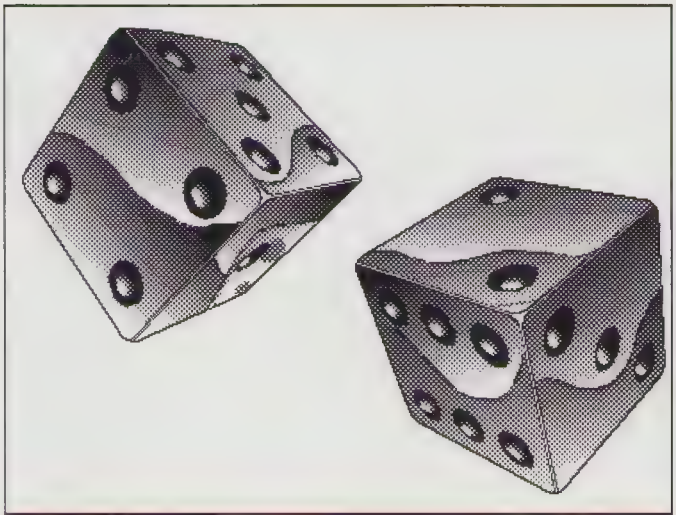
11 To generate the dots on the dice, the diagonal lines were located and then the bezier control points were lined up with the diagonals and the fine grid.

TRIPLE CHECKER

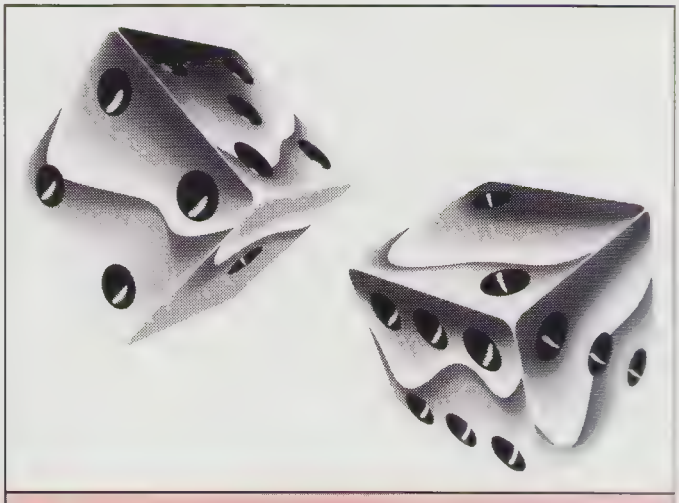
For another magazine article, I needed to produce a three-tiered checkerboard. This time I chose to use Visions, a rather exciting program from PiXel Software in London, England. The reason for using this product was that it allows something more than just rotation of a PICT file. Once in Visions, you can separate the groups of objects in the image and assign them to layers at varying depths. The program is therefore a little less two dimensional than it at first may appear.

The first task was to create a flat version of the boards in MacDraw. This was simply a case of drawing one black square and then duplicating it down the board. Having produced one board, it was grouped and then duplicated three times. At this point, the artwork was saved as a PICT file and then placed in an empty Visions document. Using the Visions movement pads, the artwork was leaned back and turned so that the image had some very strong diagonal lines. Visions allows export of the files you generate to PICT or to Adobe Illustrator so, at several points, the art was exported to the latter file.

PROBLEMS When Visions takes a PICT file, it treats it as PICT; that is, if a shape created in MacDraw has a fill and an outline, it will be treated as such, even when exported as an Adobe Illustrator file. It is a good idea to keep this in mind when exporting to Illustrator. If you do not want two paths on top of each other, you can merely do your illustration with no fill. In the resulting Illustrator file, this will produce just one outline for each object.



12 To ascertain the surface tones on the dice, several comps were created in ImageStudio. The best one was used as a guide for generating the blends in Illustrator 88.



13 Here, the final dice are shown as they appeared floating on a magazine cover. The artist's initial intention—that the dice should pop off the page—has been achieved.

The next problem is that none of these objects will be closed, and, if your original shape was a polygon, there are likely to be two points, one on top of another, where the path finished. If you feel brave, you can open up the Illustrator file with a word processor and change it. (See Figures 14 and 15.) This is one of those additional skills that has to be picked up in order to get the programs to do exactly what you want and not what the manufacturer thinks you should be doing. Editing converted illustrations this way is mind-numbing stuff, but it takes a fraction of the time that going into the Illustrator document and editing all the paths together would. For one thing, in the artwork, many of the points are on top of each other whereas, in the file, all the information is placed sequentially. No, it is not very intuitive, but yes, it is a real time-saver.

Having edited all the checkerboard outlines of the chosen Illustrator file, it was opened up in Illustrator 88. (See Figure 16.) At this point, tones were assigned to the various elements of the artwork and a few new elements were built, like the support block on the right side of the art. The boards were given thickness as well. Normally, these might be difficult elements to draw but, using perspective produced by Visions, guidelines could be drawn along the sides of the boards, the vanishing points found and the elements drawn. Having the major part of the illustration already in perspective really speeds up the drawing process on any remaining objects. (See Figure 17.)

With Visions, this concept becomes especially important for the people who use it as a perspective illustration tool. For example, it is particularly handy for rotating and shearing logos, especially symbols that have been drawn in MacDraw or MacDraft. It is often a good idea just before finishing with the original symbol document to draw a simple rectangle around it. When rotated in Visions, the rectangle will rotate with the rest of the image so that when it is exported to Illustrator or opened up with FreeHand, the convergence of the sides of the rectangle will provide excellent guides for determining the image's vanishing points. It sounds backward, but it works very well.

Program tools can diverge from their original purpose in other ways, too. For example, I find Illustrator 88's blend tool a handy "visual calculator." By giving it a starting path and an end path, the program will figure out all the intervening stages when you have told it how many you want. You can use these final steps, not only in your artwork but as a guide to the placement of other elements on the page. You can also use it to produce your own grids.

The problem with generating grids in Illustrator is that there is no distance foreshortening in the z dimension—it merely places the points equidistantly in between the first stage and the last so that, using a grid to produce a perspective view of a target will generate an image like Figure 18. Without the foreshortening, it looks rather wilted, especially when compared to its counterpart produced with a grid from GridMaker.

As you can see, locating the tools to get perspective into your illustrations can be a tricky business. The tools have to be chosen wisely after assessing how appropriate they are to the job

HOW GRIDMAKER WORKS

GridMaker is a small, inexpensive program from Folkstone Designs, Inc. Fire up the program and you see a window which, but for the scroll bars around three sides of the window, looks quite normal. The first thing to do is to select a shape. You can work with a large cursor, plane, box or a "room," with some variations of these. These are simple shapes but they can become immensely useful. Choosing a box produces what appears to be a normal grid on the screen of 10 lines by 10 lines. This is the coarse density setting, but it can be modified by choosing Medium (20 lines each way) and Fine (40 lines). The grid on the screen only begins to look like a box when you change the roll, yaw and pitch controls. This is a remarkably clever use of the Macintosh scroll bars. Clicking in the gray part of the bar bounces your box around in 10-degree increments, while using the arrows will rotate the object in single degree increments. There is an on-screen readout for each of the controls.

However, those three scroll bars are used for other things as well. Under the Rotate menu are three options: "Rotate" (which I have just mentioned), "Size," and "Place." "Size" allows you to use the scroll bars to change the size of the object. The left scroll bar changes the depth of the box while the bottom and right bars change the box's width and height respectively. They do not stretch the image; the grid unit shape is kept intact while more units are added to the box as the size is increased.

The last item in the Rotate menu is the "Place" option. This allows you to use the scroll bars to move the rotated object within the window. The left bar controls your distance from the object, and the bottom and right bars allow you to either move the object left and right or up and down.

All this makes for a tremendous amount of flexibility in moving around an object whose size and shape can be changed at any time. Choosing the right view of the object can be remarkably swift by changing to the density of the object to show just its frame. Refreshes of this image, even under MultiFinder on a MacPlus, happen immediately. When you get to an angle you are happy with, you can modify the density setting to the one you wish to use in your illustration. It is remarkable that under MultiFinder, the program only uses a meager 64k of RAM. In an age when programs seem to be chewing up every available byte of memory, it is a real treat to see one that performs complicated calculations quickly and efficiently in a small area.

at hand. Imagine, for example, trying to use GridMaker to create a herringbone pattern. With a fine grid in the background, I would still have to draw each tile by hand. Needless to say, Visions would be a far more appropriate choice. However, when it came to producing the registration mark and the dice, GridMaker was a stronger choice because all that was needed were guides.

Want to go any further? Then you cannot avoid it any longer; you may as well start looking at 3-D programs. Before you do, though, make a point of picking up a memory upgrade and the largest computer you can get. You are going to need it. ■

Simon Tuckett has eight years of experience behind the drafting table and a considerable amount of time in front of the microcomputer. For the past three years, his Toronto-based company, GraphiComp Design, has produced 95 percent of its type, effects, illustration and layout on microcomputers.

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%%Note:
1.000 w
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54.667 421.000 L
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1.000 w
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83.333 446.333 m
60.000 413.333 L
70.000 412.667 L
93.000 445.667 L
83.333 446.333 L
83.333 446.333 L
S
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88.667 439.333 m
65.000 405.667 L
75.333 405.000 L
98.333 438.667 L
88.667 439.333 L
88.667 439.333 L
S
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14 To close your objects, open up the Illustrator file. When it is on your screen, it will probably look like this.

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%%Note:
1.000 w
0.0 G
78.000 453.333 m
54.667 421.000 L
64.667 420.333 L
87.667 452.667 L
78.000 453.333 L
f
83.333 446.333 m
60.000 413.333 L
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f
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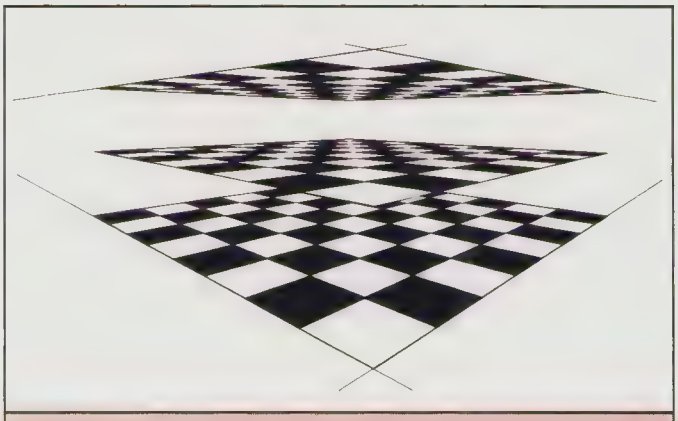
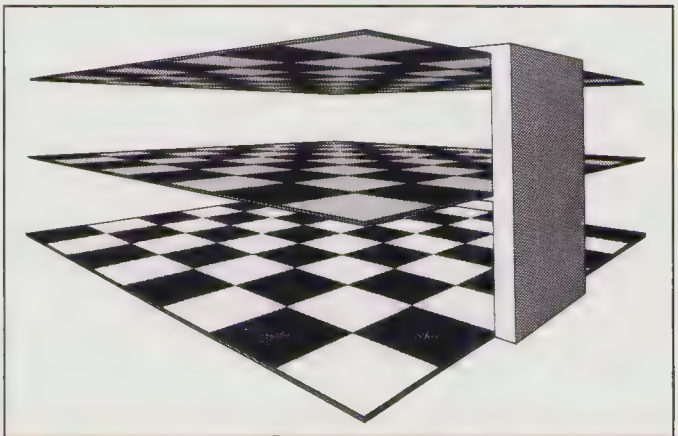
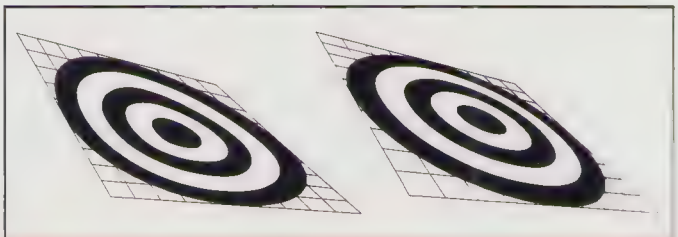
15 Replace the highlighted lines with an "f" on a line of its own so that the code looks like this.



16 Having edited the code Visions had produced, the illustration was then opened in Illustrator 88, and the vanishing points were found, using the artwork itself as a guide.



17 The final illustration is shown here after being toned and augmented in Illustrator 88. A support block has also been added on the right side of the art.



18 Care must be taken when using Illustrator 88-created grids that they are not used inappropriately, such as in the rather wilted target at left. Compare it to the GridMaker-generated grid at right.

Adventures in Self-Syndication

Maybe it won't pay all the bills, but self-syndication could provide a strong base for your cartooning activities.

By Roy Paul Nelson

When it takes on a new feature, a big syndicate spends at least $25,000 and sometimes considerably more to launch it. Reaching potential newspapers through advertising and sales calls is not cheap. In addition, syndicates face a shrinking market (the country has fewer daily newspapers than 10 or 20 years ago), making it harder than ever for a newcomer cartoonist to break in.

The typical big syndicate looks at several thousand writing and art proposals a year. From that figure, they launch a half dozen new features at most. And only one or two of these might be comic strips, editorial cartoons or cartoon panels. No wonder some cartoonists turn to self-syndication.

There are other reasons. Cartoonists do not like the idea of a 50-50 sharing of revenues coming in from the newspapers subscribing to the features. Some do not like giving up ownership of their features.

Cartoonists remember Roy Crane's giving up "Wash Tubbs" to his syndicate and moving to another syndicate to begin a new strip, "Buz Sawyer." They also remember Milton Caniff's abandoning "Terry and the Pirates" to start "Steve Canyon" with another syndicate. Understudy cartoonists carried on the older strips.

But there is a movement in the industry away from syndicate-owned features. Creators Syndicate, founded in early 1987, caused a stir when it announced that it would leave rights to all its features to the cartoonists and would not lock them into long-term contracts. The contracts would be for five-year periods, far shorter than normal. After that time, contracts could be renegotiated.

Throughout the history of syndicates—and that history goes back to 1880 with the formation of the Western Newspaper Union—cartoonists wanting to appear in newspapers across the country have flirted with the idea of distributing their features themselves. In recent times, Nicole Hollander proved it can be done by setting up Sylvia Syndicate in Chicago to circulate her unusual "Sylvia" comic strip. The middle-aged Sylvia, philosophic, iconoclastic and a favorite with feminists, appears in books and on greeting cards as well as on some big-city comic pages.

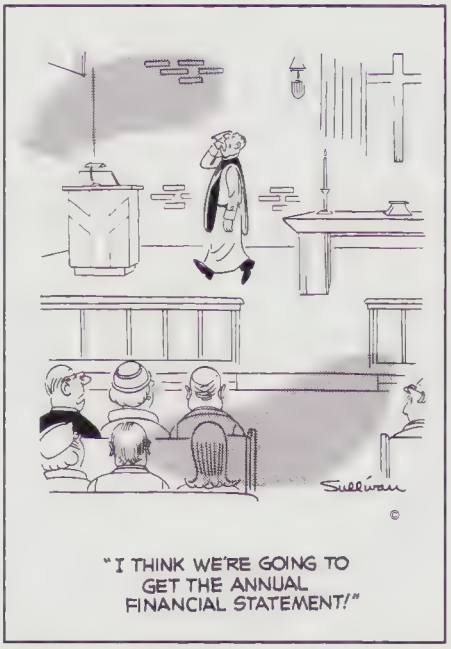
SOME SYNDICATION FACTS

Syndication for the print media is primarily a newspaper phenomenon, making it possible for even small newspapers to "hire" big-name cartoonists and writers to entertain and inform readers. It mostly serves the 1,750 daily newspapers (and their Sunday editions). Weekly and semi-weekly newspapers, considering their preoccupation with local news, seldom subscribe to syndicated features, although some syndicates serve that segment of the market.

Sometimes syndication works for magazines, but they have to be specialized magazines whose circulations do not overlap with others in the field. For example, California cartoonist Al Johns runs an operation that syndicates office and factory cartoons to editors of company magazines.

Eight or ten syndicates dominate the newspaper market, but actually several hundred syndicates scramble for sales. King Features and United Media remain the leaders. United Media owns both United Feature Syndicate and Newspaper Enterprise Association. Universal Press Syn-

Another Market Postal Church Service, manufacturer of contribution envelopes and other supplies, released a calendar featuring Ed Sullivan cartoons, including this one, taken from his *Beyond the Stained Glass* syndicated feature.



Establishing Style Sullivan uses Zip-A-Tone in abstract shapes to add depth to his cartoons. He hand-letters the captions instead of setting them in type, not only to save money but because his type would not match his subscriber's caption face.

dicate, among the leading syndicates, markets a number of the trendier strips.

Once a year, as part of its last issue in July, *Editor & Publisher*, the weekly trade journal for daily newspaper editors, publishes a syndicate directory, which lists syndicates and their features by title, author and subject. Though less inclusive in its syndicate listing, "Artist's Market," published annually by *Writer's Digest* and available in bookstores, gives information about what syndicates are looking for.

Cartoon possibilities for syndication include comic strips, editorial cartoons and cartoon panels (including gag cartoons). These features can be daily, daily and Sunday, Sunday only, weekly (no day specified), semi-weekly, or, in the case of magazines, monthly or bi-monthly. Unlike comic strips, editorial cartoons meant for syndication usually have a home-base newspaper where they originate. Syndicated comic strips and cartoon panels originate with the syndicates.

SUBJECT MATTER Whether regularly syndicated or self-syndicated, a comic strip needs a basic theme and a memorable cast of characters. For instance, in "Peanuts," Charles Schulz explores loneliness and anxiety. Every reader knows the personalities of his exquisite players. Still, Schulz finds it necessary to occasionally introduce a new character (and drop an old one) to keep things moving along.

Speaking to delegates attending a Newspaper Features Council convention in San Francisco, Schulz offered some advice on keeping a strip fresh and interesting after it is launched. Draw on your own experiences, he said. Go into areas where only you can go. And be willing to do research. Be willing, too, to change the pace in the strip. Vary mostly picture strips with mostly dialogue strips.

SPACE Space is at a premium these days. Comic-strip artists who do not have the clout of a Garry Trudeau—that is, those who cannot dictate reproduction size to newspapers—accommodate themselves to the miniaturization of their art by going from the once-standard four panels to three or two panels and sometimes to a single horizontal panel. Even four-panel

"I UNDERSTAND HE HAD A RELIGIOUS EXPERIENCE JUST BEFORE HE RETIRED!"

Look for the Hook In this cartoon, Sullivan finds a correlation between religion and retirement.

"SORRY, PAL. WITH *OUR* COLLECTIONS, THIS IS AS CLOSE AS YOU'LL EVER GET TO AN AIR CONDITIONED DOG HOUSE."

New-Age Religion Current events, in this case, the report of an air-conditioned doghouse for Jim and Tammy Bakker's pet, provide the basis for some of Sullivan's cartoons.

Charles Schulz began producing some one-panel comic strips this year.

Newspapers do not take on a new feature lightly. A new strip will most likely cause the dropping of an old strip, with the editor facing a barrage of angry phone calls and letters from loyal readers of the dropped strip.

Some of the newer strips these days capitalize on trends. It is one thing to spot a trend and come in quickly with a cartoon feature; it is another to pick up on some aspect of the human condition that is forever with us and build a feature around it. A trend may be short-lived. A feature based on such a trend will be short-lived, too.

HOW TO SELF-SYNDICATE

A cartoonist intent on self-syndication might want to consider the possibilities of a regional feature.

REGIONAL FEATURES These features can have a quality—a parochialism even—that a national feature cannot attain. Readers of a regional feature should be able to identify with the characters and, perhaps, recognize some landmarks. If the feature is an editorial cartoon, it should, of course, deal with regional rather than national and international issues. Jeff MacNelly, Pat Oliphant and the other big-name editorial cartoonists already have the national and international scene well covered.

SEASONAL FEATURES Another possibility is to develop a seasonal feature, something too sporadic for a regular syndicate. Alan Rose, a Seattle cartoonist, has regionally syndicated a Christmas strip of his that went on for a two- or three-week period.

SPECIALIZED FEATURES Still another possibility is to develop a feature for specialized newspapers or for newspaper pages or sections not serviced well now by the syndicates.

Ed Sullivan of Salem, Ohio, drifted into self-syndication innocently after drawing a series of gag cartoons for three diocesan newspapers. Other diocesan newspapers saw the cartoons and asked to run them too. So in 1967, Sullivan set up Avant Features.

People were talking about the "avant garde" in those heady days of the 1960s, and Sullivan thought that "Avant" as a name had a nice feel. He meant to launch other features as well, but as things turned out, he never got around to them.

Drawn mainly for Catholic papers, his feature, "Beyond the Stained Glass," was generic enough to appeal to the religion editors of daily newspapers, and so it also began appearing on some Saturday church pages. From the start, Sullivan tried to feature ordinary people in his cartoons rather than priests and pastors.

Sometimes events catch up with a syndicated feature. The scandals in TV evangelism made religion a hot topic with the media this year, and Sullivan sensed new interest in his feature and saw all kinds of new gag possibilities.

But "Beyond the Stained Glass" is not strictly a religious feature. It is, as Sullivan sees it, a feature that deals with ethics and morals. Real-life situations, such as blended families resulting from remarriages, provide the basis for its humor and whatever lessons Sullivan is able to subtly convey. At any rate, the feature "is more than a collection of collection basket jokes," although that topic sometimes appears in his cartoons.

A good test for each cartoon, he feels, is to determine how likely it is that people will cut it out and put it on the refrigerator.

SIZE It is probably best for a cartoonist going into self-syndication to adopt a standard size and draw to fit. Sullivan, who works in a size three times the print size to minimize line imperfections, draws for a 3¼-inch wide by 4¼-inch deep reproduction (including his all-caps hand-lettered gag lines).

FINAL ART It is important to draw boldly enough that thin lines do not disappear in the reduction. A self-syndicating cartoonist acts as a quality-control officer, checking the prints carefully before they go out. Experience shows what reproduces well and what does not—and no print improves with publication in a newspaper. Every step away from the original results in some loss of fidelity.

Feeling that markers and other tools do not produce lines that are black enough, Sullivan, a dip man, uses stiff Hunt pen points and Higgins India ink. The points are the kind that were once used in public schools. His mother-in-law turned over several boxes to him years ago, giving him a longer-than-lifetime supply. Zip-A-Tone shading sheets provide the tone he needs to give his drawings depth and a finished look.

"Be sure you use sheets that have a coarse enough pattern," he advises novice cartoonists. "Fine screens fill in when art is reduced."

In the days of letterpress printing, syndicates had to send out mats made from photoengravings. Now, with most papers printed by the offset process, a syndicate, large or small, simply sends good prints of the originals. Sullivan hires a local offset printer to make a 70-copy printing (he

HEAVENLY HUMORIST

Ed Sullivan belongs to that 1950s contingent of magazine gag cartoonists, people like Charles Schulz, Mort Walker and Johnny Hart, who used freelancing as a training ground for launching successful syndicated comic strips. He sold regularly to *The Saturday Evening Post*, *Collier's*, *American Magazine*, *Ladies' Home Journal*, *True*, and the other big markets of the time. But he was sidetracked when, at age 25, he converted to the Catholic Church, joined the Society of St. Paul, and adjourned to a seminary, where, for nine years, he trained for the priesthood. Unsure at the end that he was suited for the job, he backed away from ordination and left the order. Remaining a Catholic and armed by then with a degree in philosophy, he launched a career as an artist and writer for diocesan papers. The cartoons he drew for these papers caught the attention of other diocesan editors, and in 1967, Sullivan established his Avant Features syndicate to serve them.

As a boy-artist preoccupied with comic strips, Sullivan had especially admired the work of homespun cartoonist J. R. Williams, who did the "Our Way" cartoon panel for Newspaper Enterprise Association in nearby Cleveland (the syndicate has since moved to New York). A dream came true when, in 1971, he was called in by NEA to do the Sunday "Out Our Way," which was appearing in comic-strip form. Later, he took over "Priscilla's Pop" from Al Vermeer, who was retiring. For awhile he did both strips, but eventually they were phased out by the syndicate.

All the while he kept his own syndicate going. In addition, he created magazine and advertising cartoons and drawings, greeting cards, educational filmstrips, murals, paintings and other printed and visual pieces. With his droll and self-deprecating sense of humor, he finds himself now on the lecture circuit, brought into various Midwest cities and towns by school districts to talk about cartoons and cartoonists and to advise students on career possibilities. He also writes for Catholic papers. Only a couple of other members of the 450-member National Cartoonists Society specialize in religious cartoons.

Some of Sullivan's ideas for cartoons come from his struggle to solve the mysteries of life. "I've had a running battle with God ever since I joined the church," he says. In the spirit of reforming things, he used to "take whacks" at the church and religious types. But, in his late 50s now, he has "sort of mellowed."

He adds: "I'm trying to make it easier for people to live their lives a little more smoothly with God." He is convinced that humor helps.

likes extra copies for his files) on quality stock. He sends these out to his clients rather than PMTs, Veloxes or office-machine copies.

Sullivan gets his 70 sheets for a mere $15, but that figure reflects small-town pricing and Sullivan's long-time association with his printer.

Because his is a weekly feature, Sullivan prints four reduced-to-size cartoons on an 8½ x 11 sheet, folds it once, letting the fold run between the cartoons, and mails the sheet out a month in advance to each client, using first-class postage. Each mailing includes an invoice.

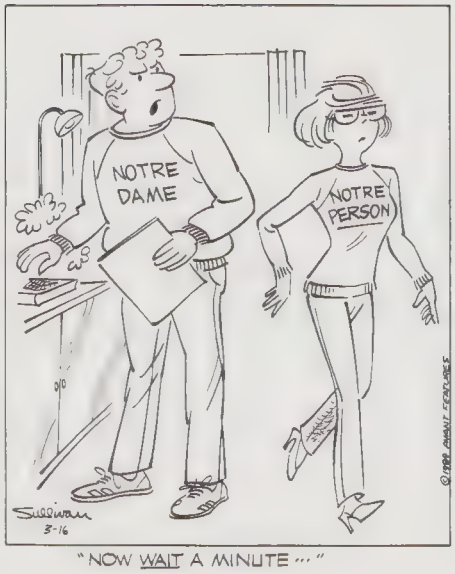
WHAT TO CHARGE CLIENTS? The price set by syndicates is usually based on circulation. The bigger the paper, the more it pays. A daily comic strip can bring in as little as $10 or $12 a week from a small paper, several hundred dollars a week from a big one. Sullivan begins his rates at $6.

Because many diocesan papers publish on Fridays, Sullivan aims for Friday publication dates. Months with five Fridays call for five rather than four cartoons a mailing. He uses legal-size paper (8½ x 14) rather than 8½ x 11 sheets those months to make room for the fifth cartoon, which he runs on its side to fit.

MAILING LIST For his mailing labels, he types out a master list and uses it to make office-machine copies on 8½ x 11-inch perforated sheets. Of course, self-syndicating cartoonists with a computer simply keep an updated file of addresses and run labels off their own printers for each mailing.

REPRINT REQUESTS Like big syndicates, Avant Features sometimes gets requests for reprinting. A cartoon that dealt with Levi pants brought a reprint request from the editor of the company's magazine and earned Sullivan an extra $100. "You work out your reprint rates on the basis of intended use and the size of the company," Sullivan says.

SPIN-OFFS Unfortunately, spin-off profits at Avant Features stop at reprints. For the big syndicates and their artists, more than half the revenue comes from licensing comic-strip characters for advertising and product use. Jim Davis' "Garfield" has spawned some 4,000 products, including the car-window stick-ons you see everywhere. Sometimes the syndicate or the cartoonist has to draw the line somewhere, though. King Features is said to have turned down an offer to market Betty Boop condoms.



"NOW WAIT A MINUTE..."

"WE'RE LOSING THEM, HARRY. I THINK WE SHOULD ASK FOR SOME NEW MUSICAL ARRANGEMENTS."

COPYRIGHT The details of copyright protection should be worked out with a lawyer well ahead of time; but, essentially, putting a copyright notice on each strip or cartoon protects the cartoonist from infringement. David A. Weinstein's "How to Protect Your Creative Work: All You Need to Know About Copyright" (John Wiley & Sons, New York, 1987) can help self-syndicating cartoonists with this aspect of the business.

SETTING UP AN OFFICE To discourage drop-in traffic and to increase access to incoming mail, many of the syndicates, including one-person organizations operating from the home, use box numbers rather than street numbers on their stationery. Instead of giving over part of his house to the business, Sullivan, who has a box number, rents space in a downtown area as a combination studio/syndicate office.

COMPILING A MAILING LIST Cartoonists planning self-syndication can get addresses of newspapers and editors' names from the *Editor & Publisher Year Book*. They can place ads in *Editor & Publisher* magazine and, if they want to reach weekly newspaper editors, they can advertise in *Publishers' Auxiliary*. But direct mail is probably the best advertising medium.

PROMOTIONS Once established, a feature needs periodic promotion. In one of his promotions, Sullivan sent some sample cartoons to selected editors with an invitation to use the service free for a month. He followed this up with a letter reminding editors of the service and enclosing a sheet carrying testimonials from editors and listing the names of papers subscribing to the feature.

SOME CAVEATS

The trouble with self-syndication is that it requires a business sense as well as artistic talent. Sullivan, who claims to have no head for figures, leaves much of the business management to his wife Gerry, a professional editor, proofreader and typesetter.

A self-syndicate operation is not likely to generate enough income to fully support a cartoonist. All along Sullivan has taken on other drawing and writing jobs. (See the accompanying biographical sidebar.)

His list of Avant Features subscribers stays at around 40. He loses one and picks up one occasionally. Sometimes an editor sees the feature somewhere and comes to Sullivan. "That," Sullivan says, "is my idea of salesmanship." ■

Roy Paul Nelson, professor of journal[illegible] at the University of Oregon, is a gag c[illegible] toonist and former newspaper editoria[illegible] cartoonist. He is the author of four books on cartooning.

Antique Olive: A Spicy Design Ingredient

This gutsy, robust typeface can add flavor to serifed and sans serifed offerings.

By Allan Haley

Antique Olive may seem to be a rather silly name for a typeface. Why would anyone want to name a type after a small, oily fruit—especially an old one? Even those who are familiar with type nomenclature may still find the name somewhat odd.

"Antique" is normally a term used to describe a serifed—occasionally a square serifed—type. Linking the term "antique" and a sans serif typeface would seem contradictory—except in France. "Antique" is French typographers' nomenclature for sans serif. The rest of the question is cleared up when it is pointed out that Roger Excoffon, Antique Olive's designer, was the design director of a small French typefoundry owned by and named after Marcel Olive.

ATTRIBUTES

Antique is a big typeface, a very big typeface. Outside of a few quicky display designs, Antique Olive has the largest x-height of any typeface you are likely to use. If there is a line of demarcation that separates large x-heights from overly large x-heights, Antique Olive marches up to, but does not quite cross that line.

PERSONALITY PLUS To further complicate matters, Antique Olive has lots of personality. This is no shy, demure typestyle. It is highly visible, robust, and at times an almost unruly design. It does not look like a conventional sans serif. Antique Olive does not have the geometric overtones of Futura or ITC Avant Garde Gothic®. Its shapes do not reflect hand-drawn roman characters as do Optima's™; and while there are some similarities between it and 20th century sans like Helvetica™ and Univers™, no one would confuse Antique Olive with either of those two types. Because it is a unique design, Antique Olive can be a "handful" with which to work.

Chevrolet...
The Quest to be the best continues...
On May 20, 1905, Chevrolet began a tradition. Not Chevrolet the car, but Chevrolet the man. That was the day that Louis Joseph Chevrolet entered and won his first big auto race, starting a tradition that would continue for the next 82 years.
And today, as we celebrate the 75th anniversary of the American debut of the first Chevrolet production passenger car, Chevrolet cars, trucks and race engines continue to claim victory after victory in almost every area in the field of motorsports.
Louis, you would have been proud!
CHEVROLET
CHEVROLET
75
1911-1986
GM

Harmonious Text Forrest Sigwart of Los Angeles-based Forrest Sigwart Design chose Antique Olive for this ad because it worked well with the face used in the logo design and it made a large body of text type "less intimidating."

Some typefaces, like Bodoni or Caledonia, have a vertical weight stress. Oldstyle designs have an obliqued stress to character stroke weights. Most sans serifs have no apparent weight stress. Once again, Antique Olive dares to be different. Its weight stress is horizontal! It is heavier at the top and bottom than on the sides of its characters. And contrary to most rules of typeface design, the top of Antique Olive is heavier than the bottom. In fairness to this seemingly idiosyncratic handling of character weights, there is a typographic theory which holds that the tops of letters (especially lowercase letters) are the most important to character recognition. Perhaps Monsieur Excoffon was testing this theory when he drew Antique Olive.

INDIVIDUAL LETTERS As a result of its unusual weight stress, some letters (especially the "s") look like they are upside

down. The dots over the "i" and "j" are also flattened considerably. This was a design necessity (because of the typeface's exceptionally large x-height) to keep the dots within the point body of the face. In fact, in the heavier weights, the tops of the "i" and "j" are scooped out to provide a reasonable amount of white space between the letter and its dot. While the "i" and "j" have benefited from a relatively good solution to the large x-height problem, the "f" did not fare so well. Its lowered crossbar (again necessary because of x-height) looks awkward and somewhat contrived.

The terminal of the "e" almost touches the crossbar, and the cap "G" suffers from a similar problem in that the right side almost closes up. In both instances, the legibility of the letters suffers. In fact, in less than ideal reading conditions, the "G" might easily be mistaken for an "O." The middle bars of the "E" and "F" also appear to be too long. While contributing to the somewhat eccentric nature of Antique Olive, this trait has no adverse effects on typographic communication. Finally, the lowercase "t" is a little out of character. It is the only letter which is based on somewhat traditional roman letterforms.

When Caslon was a more popular design, typophiles would remark that when taken individually, the letters in the face seemed poorly drawn and lacking in cohesiveness; but when set in text composition, somehow everything worked together. The results were generally considered beautiful. While Antique Olive meets the first criterion of Caslon, it does not measure up as well to the second.

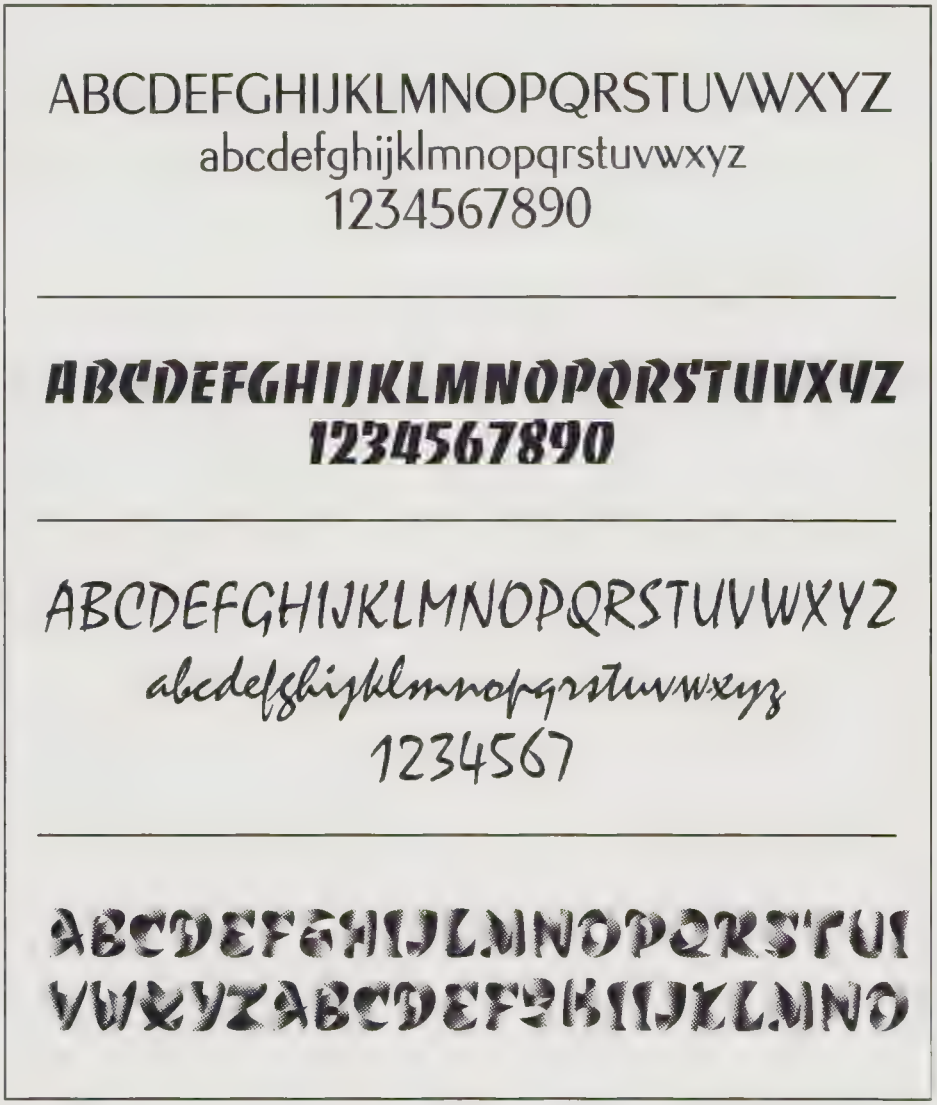
It is not that Antique Olive is a bad typeface design; it is just that it is too flamboyant. Flamboyancy can be a contributing factor in graphic communication—but it is not something which is usually sought after.

BACKGROUND

In addition to being design director for the Fonderie Olive, Roger Excoffon also ran a flourishing advertising design studio in Paris. Like a surprising number of type designers, Excoffon was a graphic designer first. Typeface design was more avocation than vocation.

Excoffon's types were also primarily drawn for advertising typography, and, as a result, are not confined by the conservative guidelines which dictate the construction of text typestyles. His typefaces tend to be personal, artist's statements, and so lack neither spirit or verve; you either like them—or you do not. (There is little middle ground when it comes to Excoffon's typeface designs.)

PREDECESSORS Excoffon's first typeface design was begun just after World War II,



Predecessors Before designing Antique Olive, Roger Excoffon developed a rather straightforward face, Chambord (top), as well as some more unusual designs: Banco, Mistral and Calypso (descending in order).

but was not completed until 1951, six years later. This first design was a stressed sans called Chambord. It is probably the least conventional of Excoffon's designs. It is a relatively straightforward design, marked only by capitals which bear a remarkable resemblance to those found in Peignot (an earlier sans serif by another French graphic and type designer, A.M. Cassandre).

Chambord was followed by Banco, a caps-only face which has been described as looking like it was built from bent sheet metal. Banco was followed by three scripts: Mistral, Choc and Diane. Mistral is, by far, the most successful of the three, and was available as dry-transfer lettering and on two-inch film fonts for many years. Unfortunately, the face is no longer readily available; it is an exceptionally powerful (and yes, flamboyant) design.

Excoffon was also responsible for the design of Calypso: the type which answered the question that no one asked. Classified as a sans serif, Calypso looks as if it was sculpted out of old scraps of Ben Day screen.

HELVETICA'S RIVAL Finally, in 1962, the first of the Antique Olive family was released. Although it was planned as a rival for Helvetica and Univers, Antique Olive emerged as its own, almost unique, design statement. It has been called the most striking sans serif since Futura and Gill Sans. Clearly it is—but is it as versatile a communications tool as either of these two earlier designs? Probably not.

CONSIDERATIONS FOR USE

Antique Olive is not a workhorse text type. It is an important typographic tool and a versatile communicator, but it is not going to replace Helvetica or Times Roman™.

First, Antique Olive's exceptionally large x-height impairs legibility. Character shapes and proportions become less clearly defined than in other, more traditional designs. In addition, when set in quantity, Antique Olive creates a very dark page. Compare a block of copy set in Antique Olive with Times Roman, Univers, ITC Berkeley Oldstyle®, or virtually any other traditional text design. The block of Antique Olive will be optically heavier. This is (again) because of its unusually large x-height. It has forced ascenders and descenders to be reduced to their absolute minimum. The natural white space produced by more conventional proportions creates a lighter, more inviting and easier page to read. To compound the problem, Antique Olive is a little on the heavy side. Its medium weight is bolder than either Univers 55 or the basic weights of Helvetica.

This does not mean that Antique Olive should be considered useless when it comes to setting type in small sizes. It just means that if books, magazines, newsletters and lengthy documents such as annual reports are the design problems you are struggling with, Antique Olive is not the solution. However, if it is directories, parts lists, brochures, advertising copy, letterheads, and similar applications you are dealing with, Antique Olive may be just right for your needs.

Why? Because in small blocks of copy Antique Olive is not plagued by its designs idiosyncracies—in fact, they may even prove beneficial. The very large x-height becomes an asset in short blocks of copy, or when information is sought out on a line-by-line basis. If lines of copy are limited to five or six, and ample white space is planned into the page design, Antique Olive does not get the chance to cast its dark shadow.

Antique Olive is an excellent choice for breaking the default status of using Helvetica or Univers for parts lists and directories. In these applications, it can be just as good a communicator as the more predictable choices. And there is the added benefit of being able to produce graphic results which have sparkle and distinction as a result of typeface choice.

BOLD DISPLAY Even though the text-usage reviews of Antique Olive are mixed, there is a lot of praise that can be directed to this type when it comes to display applications. The bottom line being: Antique Olive performs all the functions of a display type with ease and grace. Antique Olive's liabilities for text applications become assets as point size increases. Its large x-height and distinctive character traits make a bold and compelling statement. Antique Olive says, "Read this!"

In addition, most variants with the Antique Olive are somewhat condensed. This means that even though they are very tall, the letters do not take up much more space than the standard weights of Helvetica or Frutiger™.

Antique Olive is also one of the most gregarious of typestyles; it will mix well with almost any other typeface. Like most sans, it will complement virtually all serif types. But unlike other sans serif faces, it will also mix well with its serifless cousins. Most sans serif typefaces share too many similar design traits to work together successfully. (Even mixing a geometric with

a 20th-century sans is a tricky business.)

While Antique Olive is technically classified as a 20th-century sans, it is such a distinctive design that its mixing capabilities have been expanded to almost universal proportions.

'NO PROBLEM' SPACING Another reason that Antique Olive is potentially such a great display face is its remarkable ability to perform well with almost any letterspacing parameters. It can be set "normal," "snug," "tight," "very tight," and even what would be judged by many as "obscene." The reason? Antique Olive is designed so that the sides of round characters ("o's," "b's," "p's," and so on) are squared off—or even a little flat. This allows two of these characters to be set quite close to each other without creating uneven typographic color. Antique Olive has the power to produce even color under the most adverse of conditions (good news for those who graduated from the Herb Lubalin School of Spacing).

A LESSON IN ITALICS Antique Olive Italic probably is not a very useful design. First, italics are not, when the total "type picture" is taken into account, very useful. Studies have proved that they are difficult to read continuously, that readers gener-

ally do not prefer italics, and that they are far less effective "attention getters" or "emphasizers" than bold designs. On top of this, Antique Olive Italic is not much more than an obliqued roman; and as a result, is not very distinctive from its upright counterparts.

There are, however, two typographic theories when it comes to the design of italic letterforms: One group of typophiles believes that simple, obliqued romans make the best italic designs. Their theory is that these kinds of designs are most likely to harmonize with, and be compared to, the basic roman faces. These typophiles, the most illustrious of whom was probably Stanley Morison of Monotype, seek even typographic color and subtle changes in composition as a result of the use of simple, obliqued romans.

Antique Olive

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Antique Olive Medium Italic

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Antique Olive Condensed

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TASTE IN PRINTING DETERMINES THE FORM TYPOGRAPHY IS TO TAKE. THE SELECTI on of a congruous typeface, the quality and the suitability for the purpose of the paper to be used, the care and labor, time and cost of the materials devot

Antique Olive Nord

14 point

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24 point

Typography is the

Excerpted from "The Type Book," Compugraphic Corp.

The other group finds obliqued romans well, boring. They believe that since italics grew out of handwriting, they should continue to reflect and honor the importance of the calligraphic hand. These folks are of the opinion that somewhat different designs of italic type help them to do their job of standing out on a page and emphasizing important words and phrases.

Who is right? It is hard to tell. However, most italics, and even a few sans serif italics, are designed as cursive letterforms.

But not Antique Olive Italic. Now, if you side with the group of typophiles who believes that italics should be obliqued romans to blend with the upright designs to create harmonious text copy that is fine—but Antique Olive is not a face for setting lengthy text copy, and certainly is not a conservative, mild-mannered book face. It is a face to use when you want something specific noticed.

AVAILABILITY Every major typesetting equipment supplier, and most fair-sized type houses, make available a relatively large offering of Antique Olive. The basic design is available in roman, italic, condensed, and expanded variants. There is a heavier weight called "medium" and a lighter version called "light." The light is probably the best suited to lengthy copy, but because it does not have an italic counterpart you are forced (which is good or bad—depending upon which typographic faction you side with) to emphasize and highlight with bolder designs. Antique Olive also comes in "bold" which is heavier than the medium, and an even bolder design called "compact;" and finally there is the mega-bold "Nord."

Antique Olive is a finely ground, highly distinctive, and at times, rather pungent typographic spice. Used wisely, and with discretion, it can add a tasty gusto to your graphic communication. Used too often, however, or in the wrong environment, it can overpower the typographic meal you are serving. Antique Olive is an important ingredient—it is not daily fare. ■

A regular contributor to Step-By-Step Graphics, *Allan Haley is the author of "Phototypography" and is contributing editor to* U&lc, *the International Journal of Typographics, published by International Typeface Corporation, for which he serves as executive vice president.*

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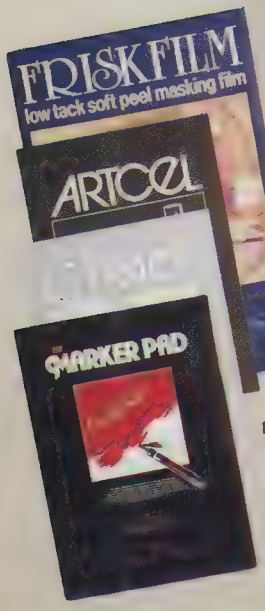

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LITTLE NEMO IN SLUMBERLAND
WHEN THE GREAT KING MORPHEUS HEARD THAT NEMO COULD NOT LOOK AT FLIP WITHOUT AWAKENING HE ORDERED NEMO BLINDFOLDED. THIS ONLY INCREASED THE JEALOUSLY THAT LURKED IN THE HEART OF THIS BOLD AND BAD LITTLE FLIP AND HE RESORTED TO DESPERATE MEANS TO HAMPER NEMO'S PROGRESS TO THE PALACE AND PRINCESS.
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McCay's Masterpiece This "Little Nemo in Slumberland" page from the March 11, 1906, edition of the Sunday *New York Herald* is one of the most striking and representative pages from Winsor McCay's most famous strip. A bold use of color—particularly the mauves, olives and purples of art nouveau and the poster movement—permeates the page. The gridwork of the panel arrangement is fairly standard, but McCay excites the eye through such means as the patterning on the zebra and the severe perspective in the number five panel. The penultimate panel reveals the touch of the master engravers who staffed the daily newspapers at that time. The original was drawn in black and white, but on McCay's instructions, all the holding lines except those for Nemo himself were printed in blue. This lent an ethereal and dreamlike feeling to the scene.

Winsor McCay: Comic Dream Master

Learn the techniques used by one of the most innovative and imaginative practitioners of the American comic strip.

By Richard Marschall

The newborn art of the comic strip was blessed from its inception with an array of talented cartoonists. And one of the most legendary practitioners during those pioneering days was Winsor McCay.

He virtually defined formal comic-strip expression, producing an unequaled body of varied and prolific work. In the years since, other cartoonists have occasionally met, but none have surpassed the imaginative and structural excellence of McCay's art. Simultaneously, he created detailed Sunday pages, intricate editorial cartoons and frame-by-frame animated cartoons.

FANTASY AND DREAMS

Aside from his other accomplishments, McCay must be honored for a characteristic of early comic art that is strangely absent today: fantasy. He was the most prominent in a school of fantasy art in the comics; and within that category, he developed a theme which he explored his entire career—the world of dreams. (See opener.)

At the turn of the century, just as modern psychology was investigating dreams, so was McCay. The result of his research, however, was not abstract theories but graphic images. And what made these dream images so compelling was both the artistic talent he brought to his imaginative creations and the sophisticated production. McCay was a superb draftsman who, without reference, could conjure up fantastic dream visions or sermons on paper. (See Figures 1 and 2.)

PRODUCTION "Little Nemo in Slumberland," McCay's masterpiece, was one of the first strips to utilize the enormous potential of the color press. (See Figure 3 and refer to opener.) Newspaper color today cannot approach the subtleties achieved in those days, and few cartoonists after McCay attempted his pyrotechnics. The metal printing plates and craftsmen engravers who shortstopped the plates after the camera's work are virtually obsolete today.

The pen-and-ink style McCay developed reflected modes employed at that time by poster artists and the art deco movement: heavy outlines around foreground figures; little detail within those figures; and use of negative white space juxtaposed with selected background elements delineated in severe detail. His use of color was [illegible]. The artist called upon bright primary colors, striking contrasts and subtle pastels—the mauves and olives of his era.

McCay was also the first comic strip artist to see his Sunday page as a unified [illegible]

sign element. A contemporary, Lyonel Feininger, was to approach his comic strips in the same manner, and a generation later, Burne Hogarth became another of the few to do so.

Oftentimes, McCay arranged his panels with handsome symmetry; he utilized severely elongated horizontal or vertical panels as the storyline suggested. Many of his panels were shaped in an unorthodox fashion, such as angular or circular. Finally, McCay called upon techniques then current in contemporary poster art, including stylized lettering, intricate patterns and motifs.

But one of McCay's more anecdotal idiosyncrasies has been little noted. In the midst of exacting accuracy, flawless perspective and detailed authenticity of props and settings, McCay used speech balloons that, at times, were clumsily drawn and sloppily lettered. Frequently, the dialogue would not fit the balloon; his lettering would be squeezed at the bottom or twisted around the side of the balloon. (Most cartoonists pencil the lettering first and make the balloons conform.) Such effects were perhaps subconscious signs to viewers that a mortal produced the work.

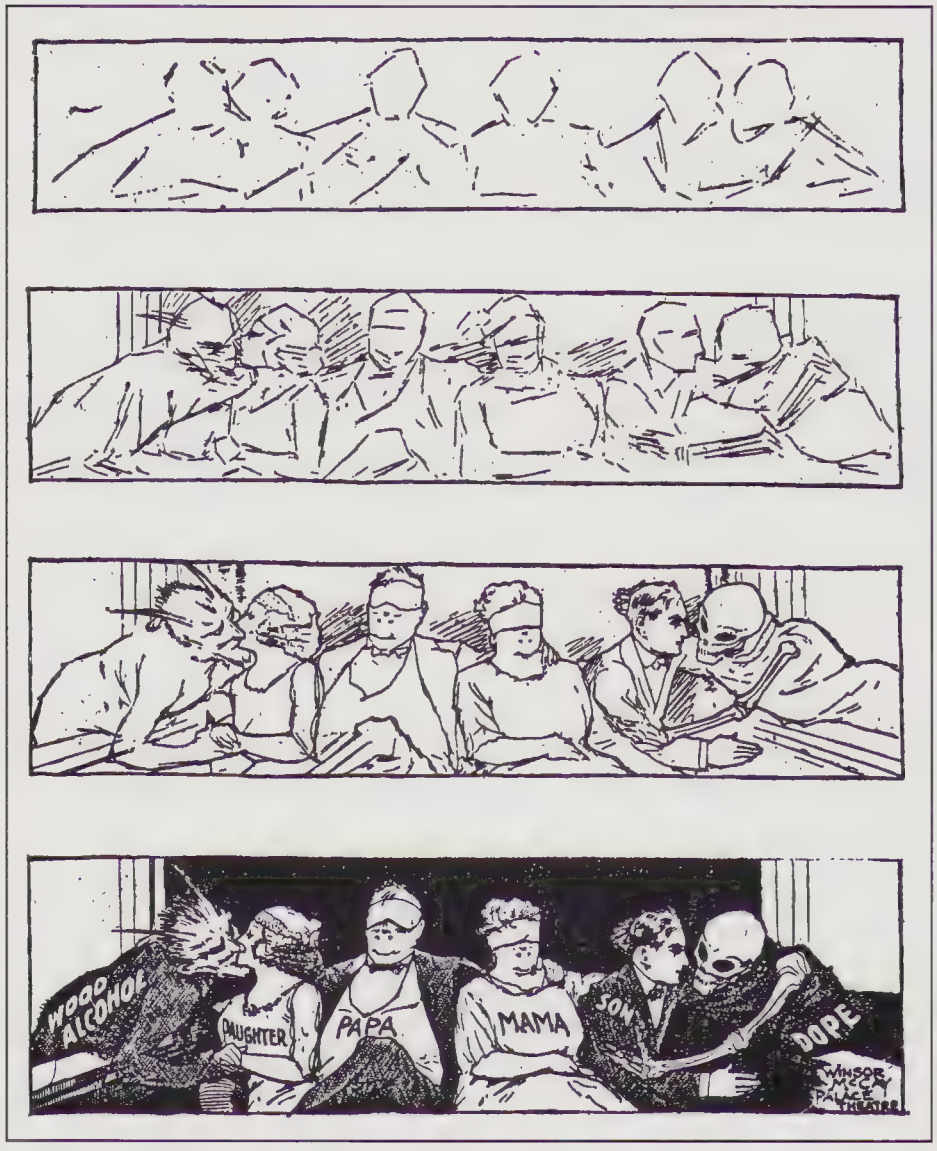


Figure 1 Drawing was certainly one of McCay's strengths. In one of his simpler editorial cartoons—a sermon-on-paper—McCay demonstrated his sketching technique. When a drawing was free of perspective and props, McCay was able to "see" anatomy and physical attitudes in his mind's eye. Although the figures are drawn realistically, McCay—as was his practice—eschewed skeletal structuring in his pencil roughs. (Collection of Ray Winsor Moniz, circa 1927.)

THE IMPORTANCE OF DRAWING

McCay believed the reason for his success as a cartoonist was his "absolute craving" to draw. "This was in me," the artist wrote. "I didn't say to myself, 'I must keep in practice' or 'I must improve my drawing.' I just couldn't stop drawing anything and everything. I drew alone to please myself. I never cared at all whether anyone else liked my drawings, nor did I get discouraged if I made a bad one."

Those who recorded their impressions of watching McCay draw say that he sketched quickly and virtually out of his head, using very little reference. He sketched loosely, preferring to leave detail work to his inking stage. With perspective work, nothing was left to approximations; his surviving cartoon roughs are filled with vanishing points. For his colors, McCay would indicate with loose watercolor applications on originals or black-and-white proofs as a guide to the *New York Herald*'s master engravers. Tooling by hand on metal engraving plates, they would translate the directions into nuances and shades.

ADVICE TO CARTOONISTS His advice to budding cartoonists was quite practical: "Start drawing and do not stop—draw everything you see, no matter how badly . . . Don't take yourself seriously—nor your drawing."

Although he was not a teacher, McCay wrote that to train cartoonists, he would set up a cone, a sphere, a cylinder and a cube and for a two-month period, ask students to draw these elements. "When you have learned to draw them well, you will be able to draw anything—including cartoons," he wrote. "The biggest thing, after all, is to develop a knowledge of draftsmanship and cultivate your creative imagination. A magazine or a book or a course of instruction might be a very good aid, but your individual initiative is the most important."

He also advised hopeful cartoonists to master perspective as well as the human figure and to choose a character and stick to it. "Work! Work! That's all there is to cartooning," he said. McCay believed that while seclusion may be good for the scientist or philosopher, "The cartoonist needs to rub elbows with his fellows and observe

humanity intimately." Ever the moralist, he also said artists would work better if they refrained from rich, greasy foods.

TELEGRAM AND HERALD CARTOONS

McCay's most innovative work was produced when he moved from Cincinnati, where he worked for both the *Commercial Tribune* and the *Cincinnati Enquirer*, to New York, where he was hired in 1903 by the *Telegram* and the *Herald*. The newspapers were high-toned and respectable; they engaged in little of the sensationalism of Hearst and Pulitzer. But owner James Gordon Bennett did not eschew competitiveness, and his weapon was the most advanced color press work among all American newspapers. McCay was promised a splendid showcase for his graphic talents in the *Herald*'s Sunday color supplement.

During his early newspaper days, McCay was prolific enough for two artists. And perhaps his employer wished to foster the illusion that he hired two artists when he asked McCay to sign his work for the *Telegram* with the byline, "Silas." The artist later claimed he appropriated the name from a local trash hauler.

Within that period, McCay produced story illustrations and editorial art; decorations for titles and portraits; futuristic drawings for a science fiction series, short-lived comic creations like "Mr. Good-enough," "A Pilgrim's Progress by Mr. Bunion," "Poor Jake" and two impressive comic strips.

One color strip was "Little Sammy Sneeze," a weekly half-page featuring a little boy whose curse—if not his raison d'être—was inevitable and massive sneeze attacks which upset the order of each episode's setting. (See Figure 4.) His other color strip in the *Herald* was "Hungry Henrietta." Like Sammy, the child heroine was curiously vapid and silent. The strip's flavor of characterization was provided by adults swirling in consternation about her eating habits. The "Henrietta" strips were not commentaries on childhood (McCay's kid strips seldom were), but were comic examinations of proto-psychological obsessions and their farcical possibilities and variations.

RAREBIT FIEND

The best of McCay's black-and-white work for Bennett was the creation, "Dream of the Rarebit Fiend." This strip ran from 1904 to 1911 in several daily formats, until 1913 in a full-page format and for years thereafter via similar titles and premises. (Refer to Figure 3.) With this strip, McCay firmly identified himself with unconscious and subconscious thoughts. He addressed both daydreams and nightmares, and discovered a mother lode of comic possibilities that guaranteed by their nature a similar wealth of graphic promise.

STRUCTURE AND DESIGN "Dream of the Rarebit Fiend" was sometimes as wide and as multi-paneled as a color Sunday page, but it was usually a daily strip, six or eight panels deep—two adjoining panels stacked in several tiers.

It featured no one regular character as the fiend who ate the melted cheese that induced a bizarre dream. There was, however, a general consistency: The strip, which could run anywhere from six to 32 panels, would open at the beginning of the vision, and, panel by panel, the story line would grow stranger. In the last panel, the

Figure 2 In contrast to the cartoon on the opening spread of this article, this "Little Nemo" page from the April 4, 1926, edition of the *New York Tribune* was drawn more than 20 years after the creation of the strip, during its third run. McCay was still exploring the very premise of his fantastic comic strip and the nature of his modest hero's dreamland adventures. By this time, the cartoonist's mixture of visual and narrative components was worked out.

dreamer would awake, vowing to himself to quit ingesting the demon rarebit.

In a structural sense, McCay established interesting and plastic conventions with the strip. Technically, the readers did not know if the opening panels were reality or a dream. There were no delineated symbols, and the ambiguity was both purposeful and protean in effect. In the last panel, the strip's internal reality would assert itself, and the reader would view the dreamer from middle distance. With no change in drawing style, lettering, panel borders, or, especially explanatory caption, the point of view shifts from inside the dreamer's thoughts to outside his body.

LITTLE NEMO

As striking as "Dream of the Rarebit Fiend" was, the strip was revealed as a mere sounding board for (and eventually corollary feature to) McCay's magnum opus, "Little Nemo in Slumberland." The strip made its debut on the back page of the *Herald*'s color section on October 15, 1905. Where "Rarebit Fiend" was black-and-white and unfolded in a standard, static gridwork of image frames, "Nemo" utilized brilliant hues and tones and experimented with unorthodox composition and panel arrangements. (Refer to opener and Figure 2.)

"Little Nemo's" major attraction was its audacious theme. Nemo was the six-year-old son of a rather prosperous and certainly pedestrian urban couple. He was remarkably non-descript and bereft of personality characteristics, something that was virtually prescribed for any comic strip lead. He was perpetually the victim, not the master, of the events in his dreams. Even Nemo's name, which in Latin means no one, reveals the essence of his personality and role in Slumberland. Each week Nemo was the player in a dream—presented in mid-action, like "Rarebit Fiend." Just at the moment of climax, whether delightful or frightening, Nemo would awake. Sometimes he fell from bed, often his parents would stir him, and usually his physical position would mirror that in the

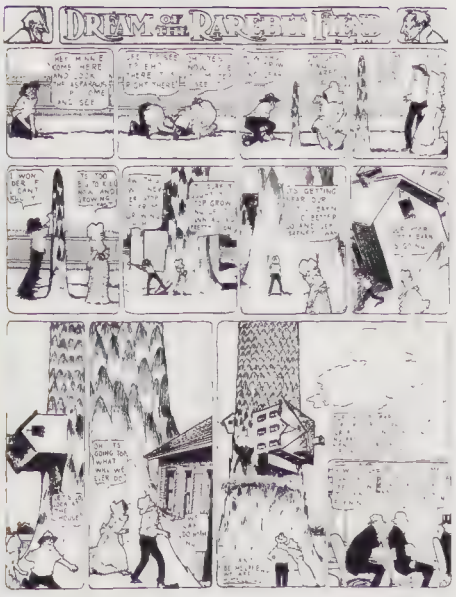


Figure 3 "Dream of the Rarebit Fiend" was a strip that preceded "Little Nemo" as a daily feature. It also ran as a Sunday strip around 1911 through 1913. Structurally, it was similar to "Nemo" and might be seen as an adult-world approximation of it. By comparing the black-and-white line drawing of the strip and its color version, which ran in the May 11, 1913, edition of *The Boston Sunday Globe*, once again we can see the superior color engraving techniques of an earlier age. The shading and blending of colors—often achieved by hand-tooling on the metal engraving plates—is seldom attempted or achieved in these days of offset, plastic-plate newspaper printing.

last moment of his dream.

The boundaries of Nemo's Slumberland were limitless, as were those of McCay's imagination. In the weekly, full-page dream sequences, Nemo could grow large or small; he was transported through the air to behold marvelous vistas; and he cavorted with bizarre creatures.

USE OF PANORAMAS McCay invested his art with breathtaking panoramas and ornate decorations. But the external beauty and grandeur he created in Slumberland—the Greek temples, the modern cities, the opulent palaces—was a cruel lie, for it promised wonder but usually revealed trouble that bordered on terror. Nemo's goals were forever elusive. His friends were without exception insipid or selfish. And when, at rare moments, genuine joy was within Nemo's grasp, McCay would have the boy awake, full of regret.

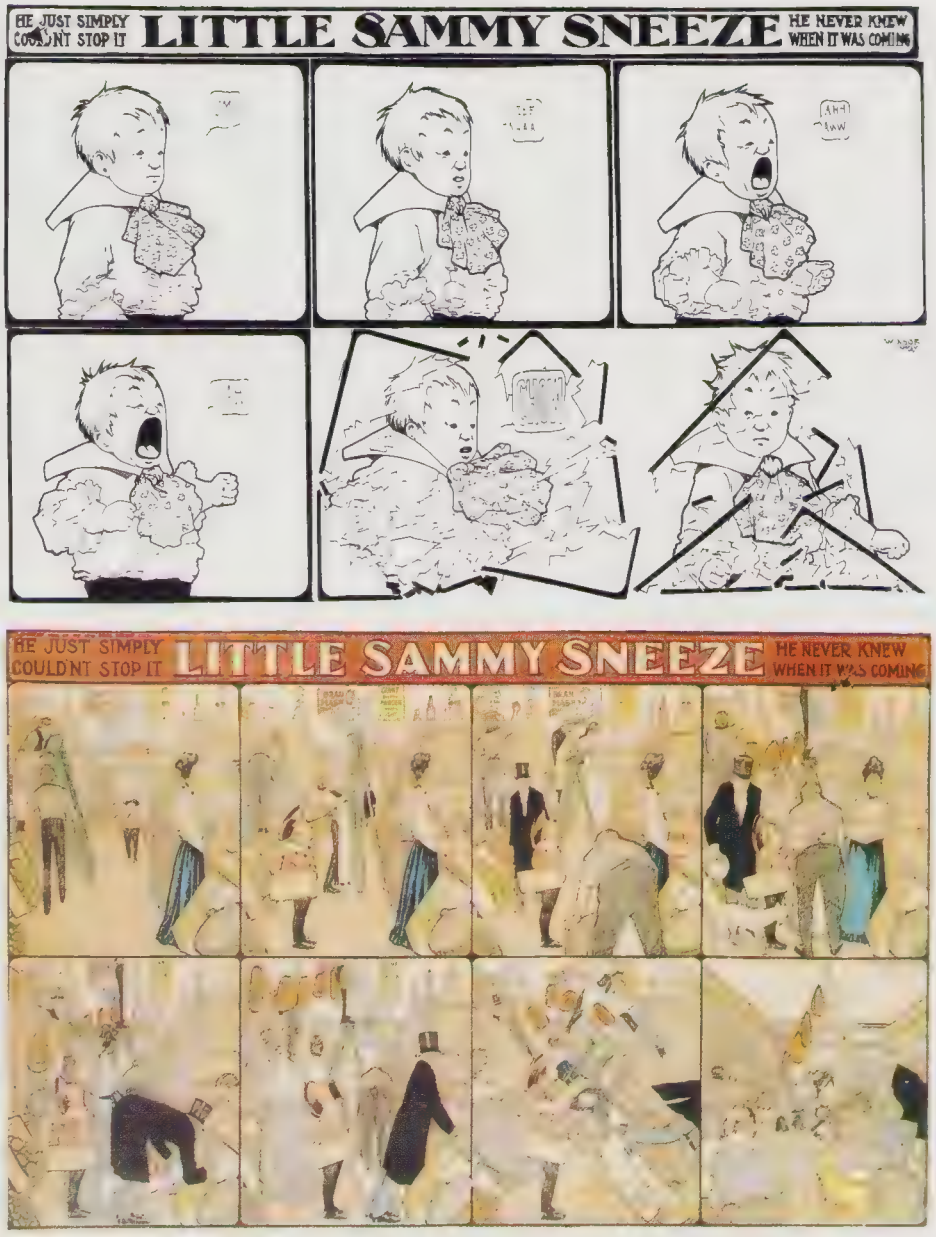
Several "Little Nemo" pages perfectly typified McCay's interplay of hope and disappointment, beauty and anguish. For example, in a New Year's commemoration, Nemo encounters Father Time and is taken to a hall of time, where Nemo can open doors labeled with each year and remove numbers that correspond to his age at that future date. In a clever thematic device, Nemo grows before our eyes in the succeeding panels to the age he would be in the year he samples. But in a cruel denouement, when Nemo knocks on the door that would make him 99, the transformation becomes permanent as the setting disappears. In the last panel, McCay draws the aged and infirm Old Nemo helpless and desperate in a bitter snowstorm.

The year 1908 was the high point of "Little Nemo's" graphic and conceptual virtuosity. Cruel fate finally yielded to pure graphic abandon when Nemo and several friends found themselves in a prolonged adventure lost in Befuddle Hall, an endless mansion where laws of gravity were routinely broken, mirror images proliferated wildly and staircases stretched into infinity.

There was an anomaly in McCay's themes and in the style in which they were depicted. McCay's world, by definition a dream land, was realized in exacting authenticity—perspective, anatomy and architecture were all academically correct. The juxtaposition of dragons and city skyscrapers, two of the artist's most utilized props, only enhanced the otherworldly aspect of the dreams that lulled and plagued Little Nemo. In contrast, Lyonel Feininger in his "The Kin-Der-Kids," drawn for the *Chicago Tribune* of 1906, chronicled relatively routine adventures, but drew in a most surrealistic, fanciful manner, prefiguring his own Cubist and German Expressionistic work.

While McCay created other fantasy strips, "Little Nemo" was the most accomplished and the most successful. During its run, there was a reprint book of "Little Nemo" adventures, a lavish Broadway musical, postcards, playing cards, a game and articles of children's apparel inspired by Nemo and licensed by McCay or the *Herald*.

But the creative and public success did


HE JUST SIMPLY COULDN'T STOP IT
LITTLE SAMMY SNEEZE
HE NEVER KNEW WHEN IT WAS COMING
AH-H-H-H

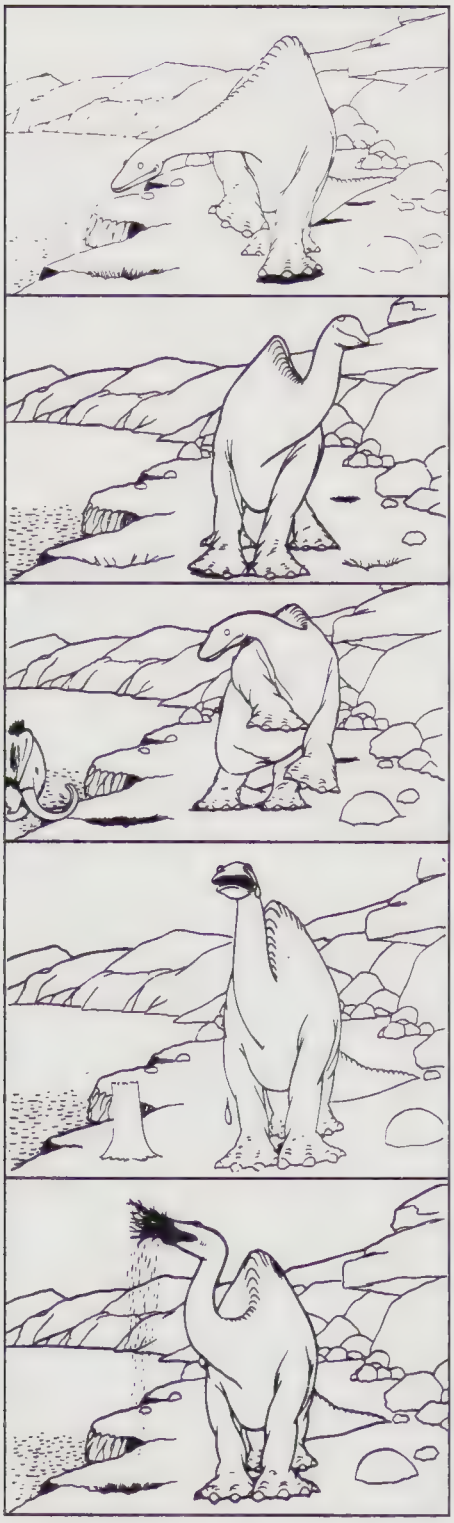


Figure 5 McCay's discovery of animation, which increasingly absorbed his time and enthusiasm, was reportedly sparked by an old-fashioned flip-book the cartoonist's son brought home. He produced his animated masterpiece, "Gertie the Dinosaur" in 1914, drawing every detail of the images himself.

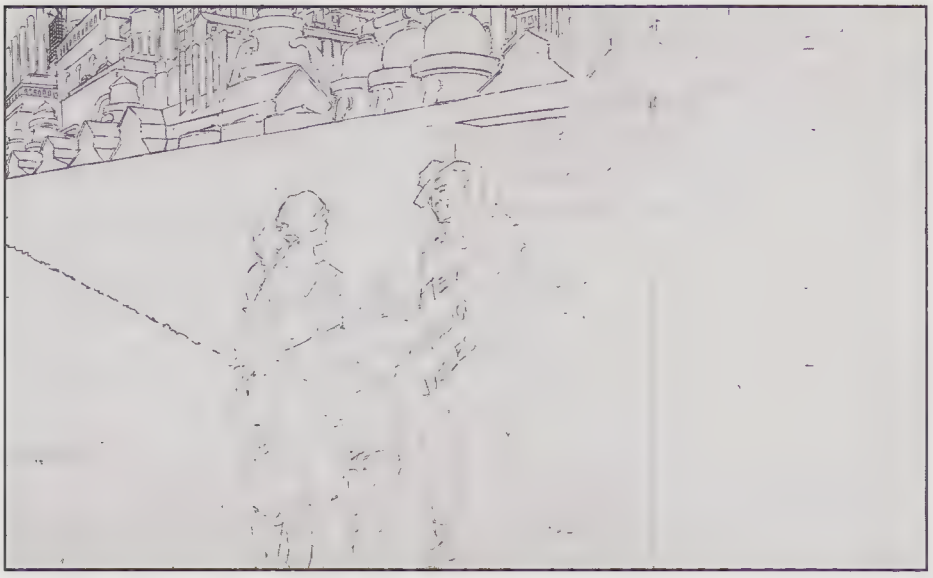


Figure 6 This unfinished editorial cartoon gives us insight into McCay's manner of construction. Sets of lines—those to establish scale and to keep planes intact, as well as perspective lines emanating from invisible vanishing points—all conflict with each other. (Collection of Ray Winsor Moniz.)

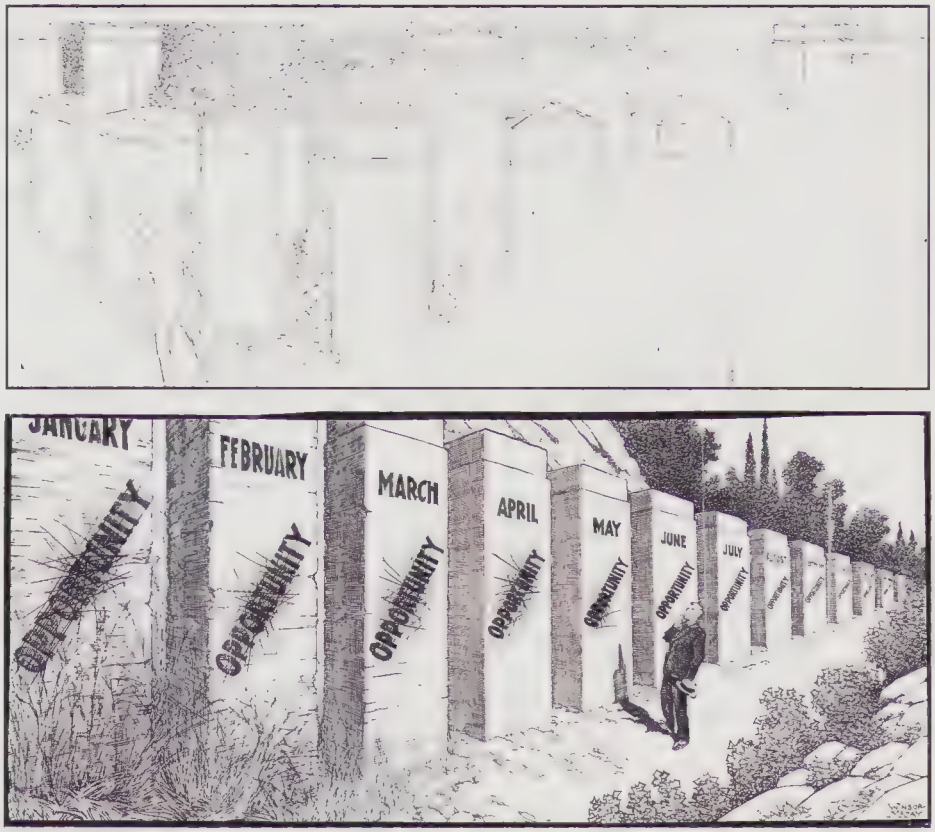


Figure 7 Two concepts for a typical McCay editorial cartoon—a rejected unfinished sketch (top) and an inked finish. The rejected drawing is on the reverse of the inked finish. Again, the penciling of the figure displays amazingly little preliminary sketching, yet the man's attitude is quite realistic and not "cartoony." Pencil lines show McCay's reliance on scaling, which he used in all of his cartoons. In the finish, McCay showed how a basic but impressive use of perspective and an overwhelming mastery of shading and texturing can turn a simple drawing (and concept) into a strong graphic statement. (Collection of Ray Winsor Moniz.)

not last. The cartoonist's relations with his showcase paper were strained by 1911, and McCay's "Nemo" had lost much of its élan. Contributing factors included financial matters, McCay's growing interest in the field of animation and overtures by the ever-present William Randolph Hearst. The success of another strip, "Mr. Twee Deedle" by John Gruelle, had gradually pushed "Little Nemo" to the monochromatic interior pages, and soon McCay was pursuing other interests.

ANIMATION

The cartoonist's discovery of animation, reportedly sparked by an old-fashioned flip-book McCay's son Robert had brought home, increasingly absorbed McCay's time and his creative enthusiasm. Drawing every detail of thousands of images himself, McCay produced his first animated cartoon in 1911. The animation—a hand-colored film of "Little Nemo"—was distributed by Vitagraph and was followed a year later by the comical "How A Mosquito Operates."

Before the use of clear celluloid ("cels") upon which animators could draw moving characters over a set background, each image frame had to be drawn completely by hand. This the patient and prolific McCay did, tens of thousands of times over for each animated cartoon.

But in 1911, McCay joined the procession of comic artists who, with seeming inevitability, went to work for Hearst. The cartoonist launched a Sunday page called "In the Land of Wonderful Dreams," which included some of his familiar characters. It was a rather dull and less colorful affair than "Little Nemo" and died after two quiet years. Gone were the vast panoramas, the innovative page layouts, the bold colors. It seems that it was Slumberland itself, not the inhabitants, that compelled, for "Land of Wonderful Dreams" dealt heavily with characters instead of situations.

Three years after joining Hearst, in 1914, McCay produced his animated masterpiece, "Gertie the Dinosaur." (See Figure 5.) Although less experimental in technical terms than his previous productions, its theme and premise were more innovative. McCay toured with his animation and played in a vaudeville routine where he issued commands to his docile creation. McCay's interest in animation continued into the 1920s. His work included a major production, the incendiary propaganda cartoon, "The Sinking of the Lusitania," as well as "The Centaurs," "Gertie on Tour," "Flip's Circus," "Bug Vaudeville," "The Pet," and "The Flying House," a 1921 reprise of "Rarebit Fiend" devices.

EDITORIAL CARTOONS

After the "Nemo" bud faded, McCay's career with Hearst blossomed. The artist became chief editorial cartoonist for the large newspaper chain, and his cartoons were syndicated to additional outlets. Technically, he was illustrating the florid editorials of Hearst editor Arthur Brisbane, but he was not a slave to either his

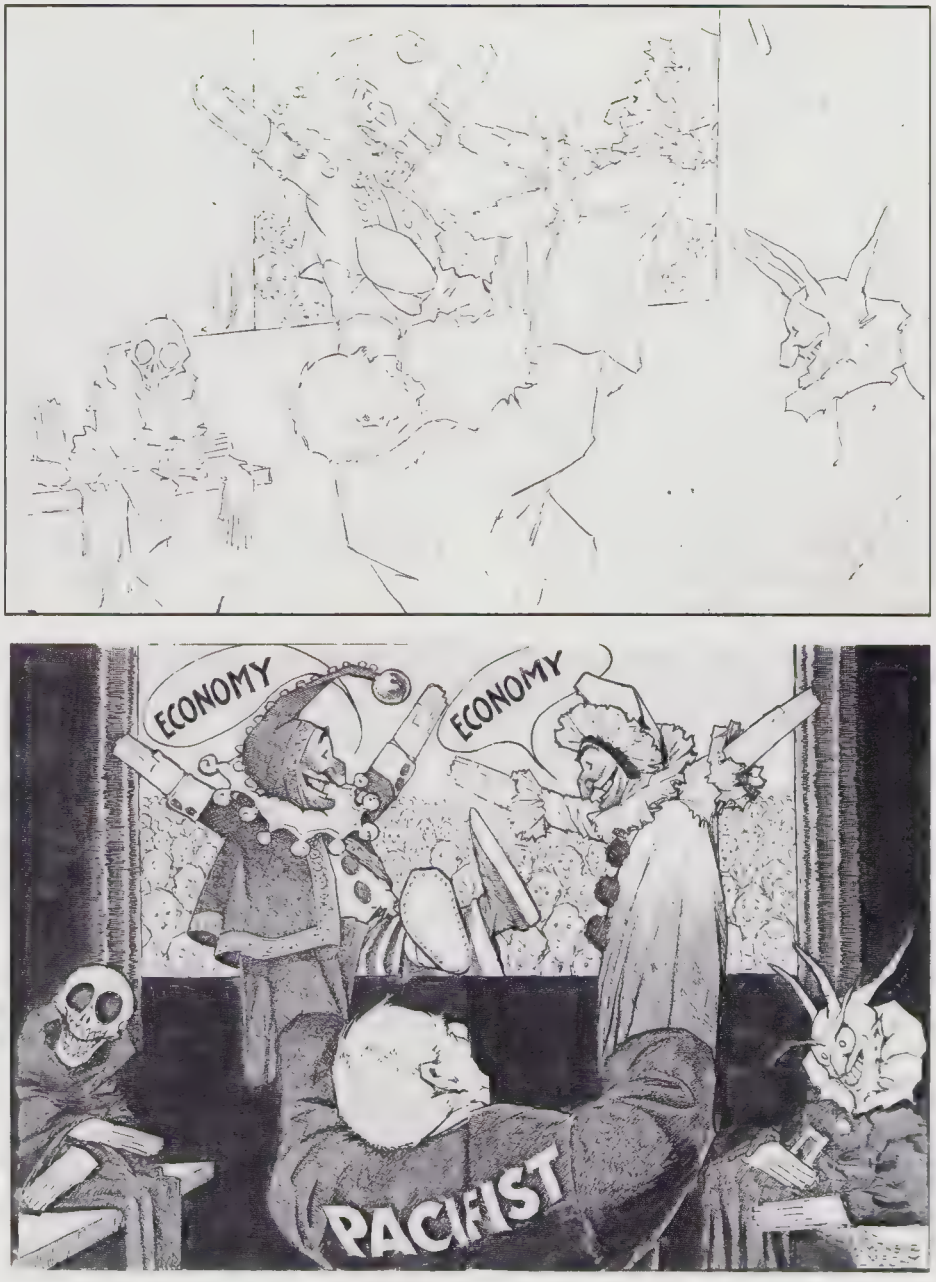


Figure 8 In a striking graphic comment on a rather mundane concept, McCay uses a dramatic angle and bold lettering to drive his point home. Scaling—used perhaps to enlarge the drawing from a thumbnail—is again evident in the pencil rough. McCay apparently chose to redraw this cartoon to suggest a larger crowd as seen through the puppet stage. As striking as the drawing and arrangement are in the sketch, McCay proves himself the master of the "finish" in his patient rendering of shading and textures and effective use of solid blacks. (Collection of Ray Winsor Moore)

A MODEST, BOURGEOIS FELLOW

While his work glows with almost psychedelic radiance, by all accounts, Senas Winsor McCay was a modest, middle-class bourgeois fellow who reported to his drawing table every morning, rolled up his sleeves, composed his wondrous work in a silent, business-like fashion, then returned to his home in the suburbs. As a man who clearly wore his pysche on his sleeve, he was wary of exposing it in other less public ways.

Although there has been some confusion about when McCay was born, reliable evidence points to 1867. And although his birthplace has never been accurately pinpointed, he was raised in Spring Lake, Michigan.

While McCay was in many ways reticent, reserved and conservative, he enjoyed a career as a vaudeville performer at the same time he was pursuing his cartoon and animation masterpieces. It was a lucrative sidelight. Billed variously as America's most famous cartoonist and the world's fastest artist, McCay dazzled audiences with lightning-quick chalk talks, sketches, caricatures of audience members and paper sermons like "The Seven Ages of Man" from Shakespeare's "As You Like It."

One thing was certain about the artist: He loved to draw. McCay drew compulsively from his earliest days. His parents indulged their son's proclivities, but sent young McCay to business school in Ypsilanti, Michigan. He often played hooky, traveling to Detroit where he was intrigued by the Wonderland side shows. He liked sketching the bizarre attractions and even profited from the sale of the drawings, which he sold for a quarter each.

McCay's talent caught the eye of John Goodison, a professor at the Michigan State Normal School. According to McCay, Goodison was a great drawing teacher, but retired at an advanced age when he felt all of his teaching had gone for naught. But the elderly instructor returned to academia when a new idea of teaching perspective came to him. "With the enthusiasm of renewed youth, he gathered about him six youngsters who seemed to have talent for drawing, the idea being to 'try it on the dogs.' I was one of the 'dogs,' " McCay wrote.

Winsor McCay A caricature of McCay by Cliff Sterrett, one of the cartoonist's co-workers on the Bennett papers in New York City. (Collection of the author.)

Goodison was also fanatical about all other forms of composition, and McCay absorbed the professor's theories. McCay also learned much about color, as Goodison had once been a stained-glass craftsman. The professor apparently had great hope for the young cartoonist. In an article McCay wrote, he quotes the professor as saying: "If that young fellow doesn't smoke too many cigarettes, the world is going to hear from him."

McCay's first job in the graphics field was in 1889 with the National Printing and Engraving Company of Chicago. He likely worked as a sign painter at the same time. In 1891, he moved to Cincinnati to work for the Vine Street Dime Museum, where he executed backdrops, posters, portraits and whatever else was necessary to add to the establishment's garish, other-worldly fantasy atmosphere. His newspaper and comic strip career began when he landed a job with the *Cincinnati Commercial Tribune.* Two years later, he moved to the *Cincinnati Enquirer.* At the same time, he also worked freelance for the respected national cartoon weekly, *Life.* Work he created at these publications, like "The Bicycle Fiend and His Logical Finish" and his first Sunday color feature, "Tales of the Jungle Imps," a page of poems and cartoons that centered on wild animals and their origins, prefigured his major comic strip work.

Technically, McCay maintained a consistency throughout his career. But his techniques—his arresting layouts, utilization of striking colors and breathtaking perspective work—were not as significant as his playful juxtaposition of graphics and premises. He conceived the most fantastic of worlds but delineated them with ultrarealistic, however elegant, precision.

McCay's vision was totally unique. Unlike other artists who chose to present their graphics and themes via posters, paintings or prints, McCay chose that new—and distinctly American—art form, the comic strip.

publisher or editor. With the editorial cartoons, he seemed to find a renewed sense of verve and excitement that was lacking in his later strips. Eventually, McCay outshone Brisbane. It was the cartoonist rather than the editor who chose the topics and wrote the capsule observations.

It appears that McCay took a real liking to editorial cartooning work. (See Figures 6, 7 and 8.) In fact, years later when he was asked to resurrect "Little Nemo" for the *New York Herald-Tribune* (albeit, again, in a rather pallid fashion), he chose to continue creating editorial cartoons for the New York paper and for its syndicate.

In the cartoons, McCay seemed to delight in architectural conglomerations seen from odd angles. Once again, figures are shown with very little anatomical sketching; McCay seemed to "see" solid figure work and near-photographic poses without reference or extensive rough sketching. Pencil roughs for his editorial work reveal McKay's technique of outlining his figures while investing their facial features with little detail. This approach was also common to his finished work.

There has never been an editorial cartoonist like McCay when he was at his full powers. He was not a political cartoonist, in that he seldom commented on partisan affairs or politics. His drawings were enormous political allegories, sometimes filling much of a newspaper page. His themes, like those of Dürer and Goya before him, were universal. (See Figures 9 and 10.) His intention was to exhort, warn and teach new generations through his visionary parables. At the drawing board, McCay was like an Old Testament prophet. Through his graphic and conceptual perspective, he propelled readers to higher planes. His subjects ranged from puny man's conceit in the face of eternity to the evils of drugs and the scandal of child abuse. He appeared to relish this role, since editorial cartooning was his major activity at the time of his death in 1934.

CARTOONIST AS POET Even in his last years, McCay never completely abandoned comic strips. For Hearst, he developed more than two dozen daily strips, most of them dealing with dream subjects. McCay wore his cartoonist's smock as proudly as a poet would wear a laurel wreath. But, of course, he was both poet and cartoonist, and much more—an innovative graphic explorer of the widest boundaries of the universe, and of the minutest recesses of the imagination. And the maps he charted were on the comic pages.

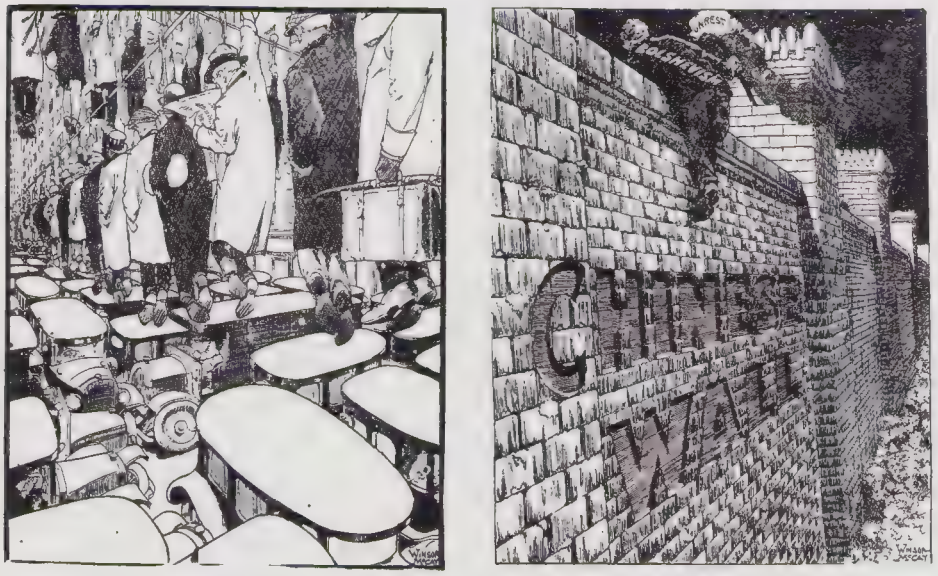


Figure 9 In a sense, these two McCay editorial cartoons are mirror images. Both deal with mundane topics in a rather routine fashion, unlike his sermonizing vista of eternity. Nevertheless, they are arresting for their visual scope and McCay's inevitable use of perspective: The commuters fade away to the left, and the Chinese Wall disappears to a vanishing point to the right. With such graphic tricks—albeit loving and masterful—McCay was able to attract readers' eyes to every cartoon that flowed from his pen.

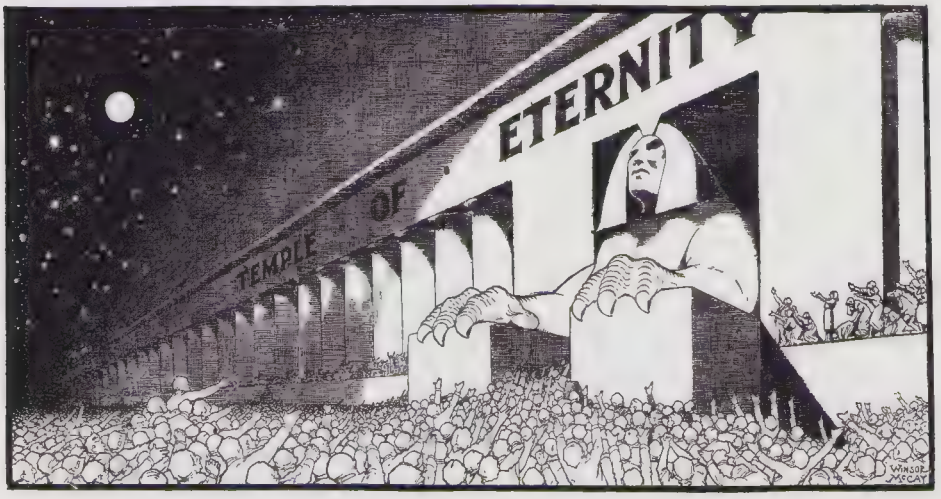


Figure 10 McCay's sermonizing vistas were powerful graphic statements which he achieved primarily through dramatic perspective, inventive use of light and dark, and patient crosshatching. The drama was enhanced by the addition of masses of faceless, pleading or suffering figures against vast landscapes. Although McCay possessed an individualistic vision, his works of fantasy and allegory had long been a tradition in America, in both art and show business.

READING LIST

If you want to learn more about Winsor McCay, you may want to consult these sources:

1. Canemaker, John. "Winsor McCay: His Life and Art." Abbeville, 1987.
2. Marschall, Richard, ed. "Daydreams and Nightmares: The Fantastic Visions of Winsor McCay." Fantagraphics Books Berkely, 1988. ■

Richard Marschall is editor of the bi-monthly, "Nemo: The Classic Comics Library," which is devoted to comic strip history. He is also the author of a numb- of books, including the forth- "America's Great Comic Strip Art-

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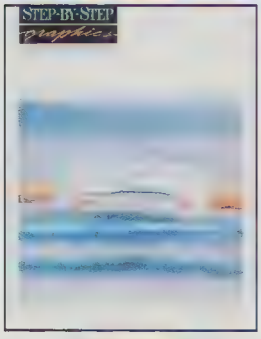

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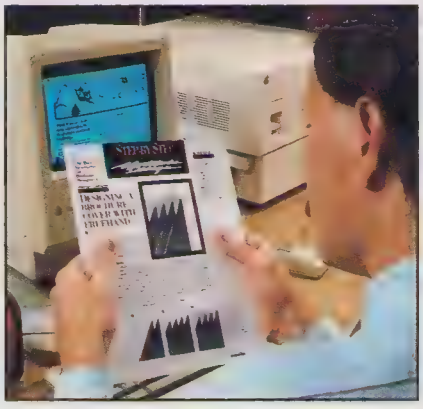

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If you need to clean your technical pens but do not have an ultrasonic cleaner, consider putting the dirty pen tips in a jar of ammonia and water and placing the jar on your clothes dryer at home. Any appliance that vibrates will work: fans, compressors, generators and so on. Make sure the solvent has adequate ventilation and is not exposed to flame. Also be certain to secure the jar so it does not "walk off."

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THE SHADOW GOES

Many studios have a problem shooting stats of artwork prepared using Amberlith or Rubylith because their graphic arts cameras do not have a backlight. A notorious shadow on the copyboard, and subsequently on the stat, is usually the result. Here is how to eliminate that problem: Take a piece of bright white marker paper, the same size or larger than your artwork. Next, spray it with spray mount and gently lay your Amberlith art on top of it, acetate side down. Cover both with a piece of tracing paper and burnish firmly. Shoot your artwork as you normally would, and shadows should be eliminated.

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—Gregory S. Osterhaus
Roanoke, Va. ■

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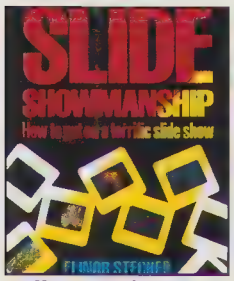

In keeping with the current trend that mandates all new books must have two titles, "Slide Showmanship: How to Put on a Terrific Slide Show," by Elinor Stecker, might have done well to simply run with the second part of its title, which better describes the content of the book. Stecker, an audio-visual and photography expert, covers nearly every base of the slide presentation game, from shooting and editing slides to synchronizing electronically-programmed, multi-projector shows.

While much of the book is written for the professional photographer, graphic artists and designers (particularly business owners) may benefit from a chapter titled, "Word Slides and Graphic Images." Planning word slides can be tricky—Stecker encourages the reader to consider his or her audience, and most important, keep it simple. "If you are planning more than 25 characters on a line or more than six lines on a slide, rethink the words you want to use. Pretend you're writing a telegram." Stecker also suggests type styles which are most legible for slide presentation.

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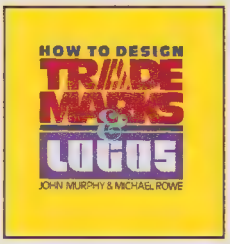
Trademarks and Logos



"How to Design Trademarks and Logos," by John Murphy and Michael Rowe is a helpful guide for those tackling a logo design for the first time, and includes history and tips that would benefit the accomplished designer as well. Divided into 11 chapters, the text is informative without being heady. The hearty portions of information are in the captions that accompany myriad examples of trademarks and logos. Many examples are easily recognized, and their evolution is documented.

Hypothetical designs appear throughout the book to illustrate concepting and design. One hypothetical design explores the image of a stalk of wheat. The images

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and conversational captions go through a metamorphosis, incorporating changes, both good and bad. "First, a quick, loose, rough sketch to see what that produces. A dramatic shape, but too vague. So let's try again, a bit tighter this time, using a reference. This is more detailed and distinctive but not very exciting." The image goes through 19 progressions until the authors write: "This is it! The space around the wheat achieves exactly the right balance all around it, and the symbol is immediately identifiable as what it sets out to be while being uncluttered and aesthetically pleasing." Other hypothetical examples include a logo design for a beachfront property, a coffee exporter and a film company.

The chapter titled "Developing the Design Brief" is particularly handy with subheads covering topics every designer should consider before creating a logo. Under "Budgetary Constraints," the authors offer advice on creating a logo for a charitable organization, cautioning, "For a client of this kind it would obviously be inadvisable to suggest a design solution that is costly to implement and maintain. Even if your initial design proposal were accepted, the design would quickly become corrupted as members of the trust sought to introduce economies."

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Design for Desktop Publishing

Just because you know how a piano works does not mean you can play beautiful music. Likewise, a computer expert is not necessarily endowed with the skills needed to create effective desktop graphic design. It is for those with computer skills and little, if any, graphics knowledge that "Design for Desktop Publishing" is written.

Author John Miles has packed 104 pages with most of the basics a budding computer designer would need to get started. Be sure your computer skills are firmly in place, however, because the book lacks details on hardware, software and techniques. The book's opening chapters deal briefly with the critical role graphic presentation plays in effective communication. Type and typesetting are next, followed by page layout, simple graphics and color, illustrations, paper, binding and planning.

This is not a manual for the experienced designer. Instead, it serves well as a guide for the beginner or the intermediate computer user looking for ideas and a more formal approach.

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(Continued on page 146)

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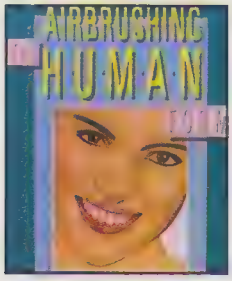
(Continued from page 145)

Airbrushing the Human Form



Anyone who has ever attempted to airbrush the human form or any of its components no doubt has encountered a variety of frustrations. "Airbrushing the Human Form," by Andy Charlesworth, was written and designed to combat those exasperating moments.

The first two chapters, "Materials and Equipment" and "Drawing for Airbrushing" are standards, full of the basic information every airbrush artist needs. In the chapter "Elements of the Human Form," sections include critical body parts such as skin, mouths, noses, eyes, ears, hair, hands, arms and legs. Each section is prefaced with a general introduction and then broken down even further. In the section on skin, for example, Charlesworth captions the creation of the soft skin of a baby in this practical way: "A baby's skin often has a warm, almost glowing appearance. The skin color was added by airbrushing a mixture of permanent red and yellow ochre. There is only a light spray of sepia underneath the flesh tone, and so the resulting color appears as a peach pink." Color, contrast, gradation, dimension and other painting aspects are also addressed in these kinds of helpful technique-oriented captions.

When creating realistic images, Charlesworth shares this knowledge: "When portrait-like realism is required, it is important to match the range of tones in the model's skin...the lighter areas of skin were sprayed in watercolor. Because watercolor is transparent, the color of the support tends to show through. By using an eraser to cut back the color, the artist adjusted the flesh tones for a lifelike effect." Other styles, from glamorous and stylized, to caricatured and robot-like human forms are also considered.

Approximately half of the book's color illustrations are step-by-step format, while the remainder consists of excellent examples showing how a technique was used. The final chapter, "Gallery," is a mini-portfolio displaying the works of airbrush artists such as Peter Clark, William Grandison, Alfons Keifer, Todd Schorr and others. The selection of artists is well-orchestrated, giving the reader a sense of the varied styles that can be achieved with airbrush.

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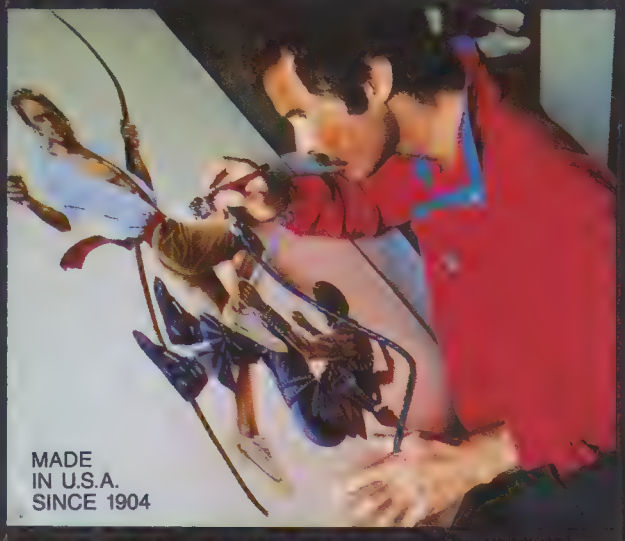

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CALENDAR

Upcoming seminars, trade shows, exhibitions and other events in visual communications.

Drawn to Excellence: Masters of Cartoon Art, through November 19, Cartoon Art Museum, San Francisco. ("Krazy Kat" by George Herriman © 1926 King Feature Syndicate.)

SEPTEMBER

Ipex 88 September 6-14, the National Exhibition Centre, Birmingham, England. The International Printing Machinery and Allied Trade Exhibition will feature over 1,000 exhibitors in seven full halls. Contact: Birmingham Convention & Visitor Bureau, National Exhibition Centre, Birmingham B40 1NT; 021-780 4321.

Laser in Graphics: Europe September 10-12, Metropol Hotel, Birmingham, England. The international conference will feature a variety of presentations on technological trends and developments for electronic design and prepress. Contact: Lasers in Graphics: Europe, 63 Wintringham Way, Purley on Thames, Reading, Berkshire RG8 8BH, England; (0734) 428492. U.S. (619) 758-9460.

What You Don't Know Can't Help: An Introduction to Computers in the Visual Arts. September 10-11, School of Visual Arts, New York City. Lectures and demonstrations by prominent artists and innovators will cover diverse computer graphics topics, including photographs and the computer, desktop video, painting on the computer, page layout, network publishing, presentation graphics, electronic prepress and expanding the illustrator's market. Contact: The School of Visual Arts, 209 East 23rd Street, New York, NY 10010; (212) 679-7350.

Desktop Publishing Conference September 14-17, Santa Clara Convention Center, Santa Clara, Calif. Product exposition will run September 15-17. Gathering will concentrate on electronic publishing applications and solutions, as well as the latest Mac, PC and Unix equipment. Contact: Seybold Seminars, 6922 Wildlife Road, Malibu, CA 90265; (213) 457-5850.

Spectrum '88 September 14-16, Arizona Biltmore, Phoenix, Ariz. The conference's theme, "Charting the Course to Quality," will be studied by many segments of the advertising print production community. Contact: Graphic Communications Association, 1730 North Lynn Street, Suite 604, Arlington, VA 22209-2085; (703) 841-8160.

Mead Annual Report Show Opens September 15, International Design Center, New York City. Continuing exhibit will run September 15-30 at the American Institute of Graphic Arts, New York City. The 32nd annual exhibit will display the 29 winning annual reports from Mead's yearly competition. Contact: Mead Paper, Fine Paper Division, World Headquarters, Courthouse Plaza Northeast, Dayton, OH 45463; (513) 222-6323.

How to be a Successful Freelance September 17, St. Louis; September 24, Kansas City; additional dates and cities available through 1989. The seminar covers the motivational and organizational requirements necessary to succeed as a full-time, freelance graphic designer, art director or copywriter. Contact: C.S. Foote & Company, 233 West Canto Street, Boston, MA 02116; (617) 262-1369.

Design Management Conference September 18-22, Harbor View Hotel, Martha's Vineyard, Edgartown, Mass. Lectures and workshops will cover the theme "Management Styles, Information and Tools for Achieving Design Excellence." Contact: The Design Management Institute, 777 Boylston Street, Boston, MA 02116; (617) 236-4165.

UCDA Annual Conference September 25-28, Hyatt Regency Hotel, Washington, D.C. The 18th annual conference will include presentations by illustrator Marshall Arisman, photographer Bob Llewellyn, poster designer Jan Sawka, and designer Alan Siegel. Seminars on copyright, design management, computers in design and continuing education will also be offered. Contact: University and College Designers Association, 2811 Mishawaka Avenue, South Bend, IN 46615; (219) 288-UCDA.

Magazine Production '88 September 28-30, Fairmont Hotel, Dallas, Texas. Printing and Production, Computer-Aided Publishing and Design are the three main themes of the second annual conference. An exhibition will run concurrently. Contact: Magazine Design and Production, 4551 W. 107th Street, Suite 343, Overland Park, KS 66207; (913) 642-6611.

ADDOC Fall Seminar September 29, Red Lion Inn, Costa Mesa, Calif. Joe Duffy of the Duffy Design Group will present his new ideas in graphic communication. Contact: Art Direction + Design in Orange County, 145 West First Street, Tustin, CA 92680; (714) 730-1332.

Drawn to Excellence: Masters of Cartoon Art. Through November 19, Cartoon Art Museum, San Francisco. The exhibit will feature the work of such masters as Charles Addams, Charles Schulz, Will Eisner, Rube Goldberg, George Herriman, Walt Kelley, Thomas Nast and Saul Steinberg. Contact: Cartoon Art Museum, 665 Third Street, San Francisco, CA 94107; (415) 546-3922.

(Continued to page 152)

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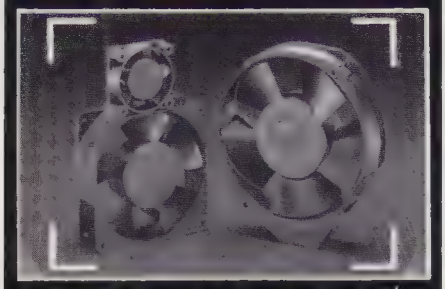

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(Continued from page 150)

APA New York Exhibit Through October 1, Nikon House, New York City. Fifty-three prints, shot by leading commercial photographers from the New York metropolitan area, will be exhibited. Contact: Advertising Photographers of America, New York Chapter, 27 West 20th Street, Room 601, New York, NY 10011; (212) 807-0399.

DGEF Workshops and Seminars Intensive two- to five-day courses beginning in September, including AV Presentations, Hands-On Video Production, Step-By-Step Design, Marker Techniques and Advanced Electronic Design and Illustration. Contact: Dynamic Graphics Educational Foundation, 6000 N. Forest Park Drive, Peoria, IL 61614; (309) 699-8866.

OCTOBER

Paul Rand Retrospective October 1-25, School of Visual Arts Museum, New York City. As the first recipient of SVA's Masters' Series honor, a comprehensive collection of Rand's work to date will be shown. Contact: SVA, 209 East 23rd Street, New York, NY 10010; (212) 679-7350.

1988 Electronic Design in Print October 2-6, San Diego Convention Center, San Diego, Calif. The conference will feature 80 speakers who will present management and technical information on implementing and using electronic equipment in the design process for print. Contact: Electronic Design in Print '88, 1855 E. Vista Way, Suite 1, Vista, CA 92084; (619) 758-9460.

Spots October 3-17, The Art Directors Club, New York City. The original artwork of the winners of The Society of Publication Designers' Spot Illustration contest will be shown. Contact: The Society of Publication Designers, 60 East 42nd Street, Suite 1130, New York, NY 10165.

Looking Forward October 5 through November 4, Marshall Arisman will chair this exhibition which will display a variety of concepts on what the future might bring. Contact: The American Institute of Graphic Arts, 1059 Third Avenue, New York, NY 10021; (212) 752-0813.

Screen Print '88 International October 5-8, George R. Brown Convention Center, Houston, Texas. "Explore New Frontiers" is the theme of SPAI's 40th annual convention and exposition. Contact: Screen Printing Association International, 10015 Main Street, Fairfax, VA 22031; (703) 385-1335.

Airbrush Action Getaway October 6-9, Montego Bay, Jamaica. David Kimble, Michael Cacy, Stanislaw Fernandes, Dave Malone, Ricky Patrick and Jerry Lofaro will present intensive hands-on airbrush instruction. Contact: Airbrush Action, 317 Cross Street, Lakewood, NJ 08701; (800) 232-7874.

The History of American Graphic Design October 8-9, School of Visual Arts, New York City. The second annual SVA symposium, titled "Modernism and Eclecticism II," will focus on significant American design and designers in the 20th century. Paul Rand will be the featured speaker, and he will be joined by Saul Bass, Steven Heller, Phil Meggs and Lorraine Wilde, as well as many other distinguished designers. Contact: SVA, 209 East 23rd Street, New York, NY 10010; (212) 679-7350.

The Cover Show Deadline for entries, October 10. The competition for the 1988-89 exhibition season will accept covers in many different categories. For more specific competition information, contact: The American Institute of Graphic Arts, 1059 Third Avenue, New York, NY 10021; (212) 752-0813.

ADDOC Fall Seminar October 20, Le Meridian Hotel, Newport Beach, Calif. Seymour Chwast of the Pushpin Group will speak on the topic, "Love and Death in Graphic Design." Contact: Art Direction + Design in Orange County, 145 West First Street, Tustin, CA 92680; (714) 730-1332.

Art & Design in Action October 27-29, Hyatt Regency Hotel, Chicago. Seventy-one educational programs and exhibit hall for fine, commercial and graphic artists. Contact: NAMTA, 178 Lakeview Avenue, Clifton, NJ 07011; (201) 546-6400. ■

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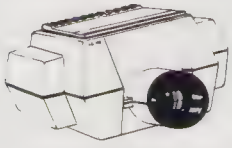

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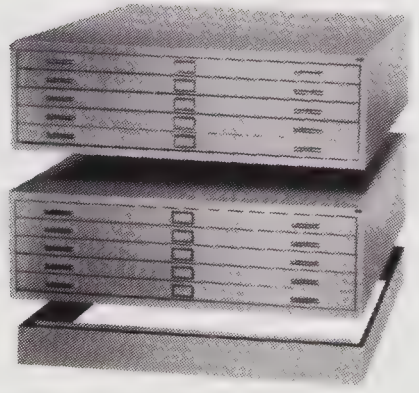

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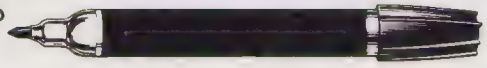

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We want to see your best work in the categories listed below. A Gold and Silver award will be given in each category. The competition is open to work produced between September 1, 1987 and August 31, 1988. In keeping with the concept of the creative team, anyone connected with the project can enter the material. Winners will be announced at Photo '88 in December. And all winning entries will appear in a special edition of *Photo/Design* scheduled for March/April '89.

Entries must be submitted as proofs, tearsheets, or finished printed pieces. Do not submit original photographs or slides. Please tape a fully completed entry coupon (see below) to the reverse side of each entry and make sure to include the category number. (Of course, we will accept photocopied versions of the entry coupon.) Enclose a check or money order for your entry fee. And mail your entry by October 1, 1988 to: *Photo/Design* Awards, Billboard Publications, 1515 Broadway, New York, New York 10036. Submitted materials cannot be returned.

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VIEWPOINT

Trends In American Illustration

Milton Glaser leads off the first in a series of interviews with prominent American illustrators and designers.

By Félix Beltrán

American illustration is in the midst of a number of diverse trends, from expressionistic rendering to a return of classical drawing and painting. So says designer and illustrator Milton Glaser, one of the founders of Pushpin Studios, which helped set a new course for American illustration in the 1960s. Glaser studied at Cooper Union and with painter Giorgio Morandi in Italy. He is now the principal of a New York City design firm that bears his name.

In the following interview, Glaser notes some of those trends, the factors that might have influenced them, and he places them in the context of the history of American illustration.

Beltrán What, in your opinion, are the new trends in American illustration?

Glaser I would say that there are several trends in American illustration. On the whole, illustration tends to be more expressionistic than it has been in recent years. And while all illustration to some extent has an element of expressionism in it, you are more conscious of this tendency in some emerging work today.

This work is especially related to German expressionism, with its more violent attack on the surface. There is more of a sense of an object being handmade, if you can use that phrase in regard to illustration. You are very conscious of the medium and the expressive content of the pigment itself; you can see that something is done with thick paints or with pastel. The material itself does not disappear behind the imagery. You are conscious of the actual texture of the media, as opposed to the rendering. The work also has an intensity, an emotional basis which is characteristic of expressionism.

Modernist Javier Romero's designs reflect a post-Bauhaus way of representing information. (Bloomingdale's, A.D. John Jay.)

The other major trend is a return to a certain kind of naturalistic rendering based upon observation. You see a lot of very naturalistic renderings of animals and plants that are meticulously done. It looks back to a very old way of doing illustration. It is not dissimilar in terms of structure, form and use of color to ideas expressed in the Renaissance. It is a version of classical drawing and painting, one that has a very strong tradition in American illustration.

Yet another trend seems to be a strong interpretation of post-cubist thought, a form of synthetic cubism—the flattening of forms and the use of colored patterns. It is a cubist vocabulary of fracturing forms and making them more geometric. This trend actually seems not so much based on the work of Picasso and Braque but rather on the generation that followed, which tended to make cubist invention more decorative. Now you will see a lot of young people doing cubist work that looks a little like (Kasimir) Malevich or (Lazar) Lissitzsky. This, combined with expressionism, is forming a whole basis for a new kind of look in American illustration. When you combine those two things —the formal characteristic of the Russian constructivists, and expressionism—you get a different look.

There is also a modernist or art deco look, which is related to this idiom. It is very heavily invested in the kind of work designers were doing in the 1950s. There was a generation of young people at that time who had discovered a European, post-Bauhaus way of representing information. The new generation looks not to the roots of cubism but to the variations of cubism done by those American designers and illustrators working in the '50s.

Expressionism Marshall Arisman is one of a number of illustrators practicing a form of expressionism. (*Mother Jones*, A.D. Louise Kollenbaum.)

Synthetic Cubism Gene Greif's work is representative of a resurgence of cubist ideas. (*Atlantic Monthly*, A.D. Judy Garlan.)

There is also what is inappropriately called a modernistic tendency in a lot of illustration—modernistic in this case being the years from the 1930s to the 1950s. This was when the ideas of the international style of architecture and Mies Van Der Rohe were prominent. These were all reductive, simplified versions of form. There was also the introduction of collage and to some extent the beginnings of surrealism. All of those factors seem to be quite powerful in the work of younger designers right now.

All these different ideas seem to be a manifestation of the absence of a mainstream belief system. But I think in this modernistic trend, there is beginning to be a tendency. Thematically, it seems to be something that many young people are doing at the moment.

Beltrán Would it be considered a school of thought?

Glaser No, I do not think it is a school of thought. But there is a formalistic interest now in design, and consequently, in illustration. It is a concern with form as opposed to content. Many young professionals design as though what they were saying is irrelevant; the content is not as significant as the formal exercise of shape, color, form and so on. This takes design into an area of abstraction and tends to eliminate at least half of the subject matter of illustration or design. It happens to be a direction that I do not think is very useful. But this formalism is very much evident in current design. Today you will see many designs that are interchangeable. For example, you might see a design for a perfume bottle and a design for a garbage can, and the language is the same. Or you may see an ad that sells peanuts and an ad that sells automobiles, and their design assumptions are the same. I have always worked under the assumption—and I say this repeatedly—that there is no separation between what something is and the way it is expressed. So I think that this trend of emphasis on formal qualities is not particularly useful.

Beltrán What factors have influenced or determined these new trends?

Glaser It is hard to think about that. In a broad sense, television has influenced our appetite for visual variation. And to some extent, even the decline of opportunity has influenced people. I think people tend to be more dramatic and excessive—and more expressionistic—when they have less opportunity to make themselves visible. So they try desperately to be visible by being as dramatic as they can be.

A change also occurs in this profession when you come to an end of a long-term era. There is a natural interest in the new generation of art directors and magazines to find new practitioners. There is also a natural tendency on the part of an emerging generation to do two things simultaneously: One is to follow the grand masters and the other is to repudiate them. In one, young people repudiate the previous generation's work, and in the other they embrace the old generation and try to

prove on it. Both things go on. I think what is happening now is that certain younger individuals with strong personalities have influenced their contemporaries in an attempt to create the voice of the younger generation. So that is a big factor, a reason why illustration changes at all.

Beltrán Which of the trends do you consider the most representative—the most important of the new trends?

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Glaser I think that is hard to assess because when something is emerging, you really do not know what kind of direction it is going to take and what kind of meaning it is going to have. Unlike painting, illustration is very much related to narrative content, to storytelling and to reflecting the ideas of literature. As a result of that, it is hard to criticize illustration as though it was painting and as if it was emerging out of a different sensibility and vision of the world. In illustration, there is always an intermediary, which is the literature itself. Trying to explain ideas that are literate is not quite the same as if you were observing trends in painting.

There was a big shift from the historical tradition of illustration in the 1960s. Up until that time, illustration was very much mainstream and dominated by the Society of Illustrators, the Westport school and the Famous Artists school. And that was American illustration. It came out of a very strong tradition which could be traced back to Winslow Homer, N.C. Wyeth, Howard Pyle and so on. And it had a very continuous history in the United States. Then in the '60s when we came up (the Pushpin Group), there was a move away to an alternative tradition which had a very different base. It looked to Europe to some extent and to other art movements. It did not come directly out of the lineage of American illustration.

I don't know whether there has been a major shift since then. If you look now at the publications by the Society of Illustrators and "American Illustration," which are supposed to represent two different viewpoints, you find a lot of overlapping. There is a tremendous variety in attitudes, but some consistency.

Beltrán In what media do most of these new trends appear?

Glaser Probably more than in any other media, these trends appear in the marginal or small magazines. Those are the magazines that pay poorly and experiment, and are willing to use the work of younger people. These magazines are always on the fringe of things; they are publications that are not quite successful. Magazines that are successful tend to use successful practitioners.

There is very little work that is being done in book illustration in America. Illustrated books have declined dramatically, with the exception of one category: chil-

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dren's books. Curiously, experimental work is not as frequently encountered in children's books as you would think. From an artistic point of view, generally, they are now very conventional. And while sometimes they are extremely well done from a technical point of view, you do not see very much in children's books in terms of visual adventure. In the 1940s and 1950s, children's books seemed to be much more adventurous.

Beltrán How do you see your work within these trends?

Glaser I don't know. I think one of the problems for anybody who is a practitioner is that they have to respond appropriately to the change of sensibility, but they cannot be a slave to that change. You always try to balance your own work, what it represents, and respond to what is going on around you in the same way as anybody who has a personal sense of style in the way they dress. Some people dress the way they did 30 years ago, some people dress 10 minutes ahead of the fashion trend, but everybody determines the position that they have in relationship to the currents of change.

I think that one of the problems that designers and illustrators have is that if you change with the winds, you become more involved with the fashion of design than with its other values. But if you are not responsive to the changes, you can't find work. This is, without any doubt, one of the great differences between painting and illustration. What we want from the painter is the clear exposition of their soul, their thought and their being. From the illustrator, we want information expressed in a way that is contemporary and appropriate for the audience, and modified by the moment of time in which it is done. These are two different ways of working which should not be confused.

For illustrators, the question has always been to develop a voice that is unique and broad enough so that it continues to remain valid regardless of the changes that happen every five years in the profession. That is very difficult for some to maintain, but the best people have always managed to do that. ■

Félix Beltrán is a professor at the Universidad Autónoma Metropolitana in Mexico City and is recognized internationally for his trademark symbols, posters, illustrations and a variety of other work. (See Step-By-Step Graphics, *Vol. 4, No. 3, March/April 1988, p. 136.) The material for this and other interviews was collected while Beltrán was in the United States on a Fulbright Scholarship. The designer plans to publish the material he collected in a book on American illustration. Other prominent designers he interviewed include Brad Holland, Marshall Arisman, Ivan Chermayeff, Doug Johnson and others.*

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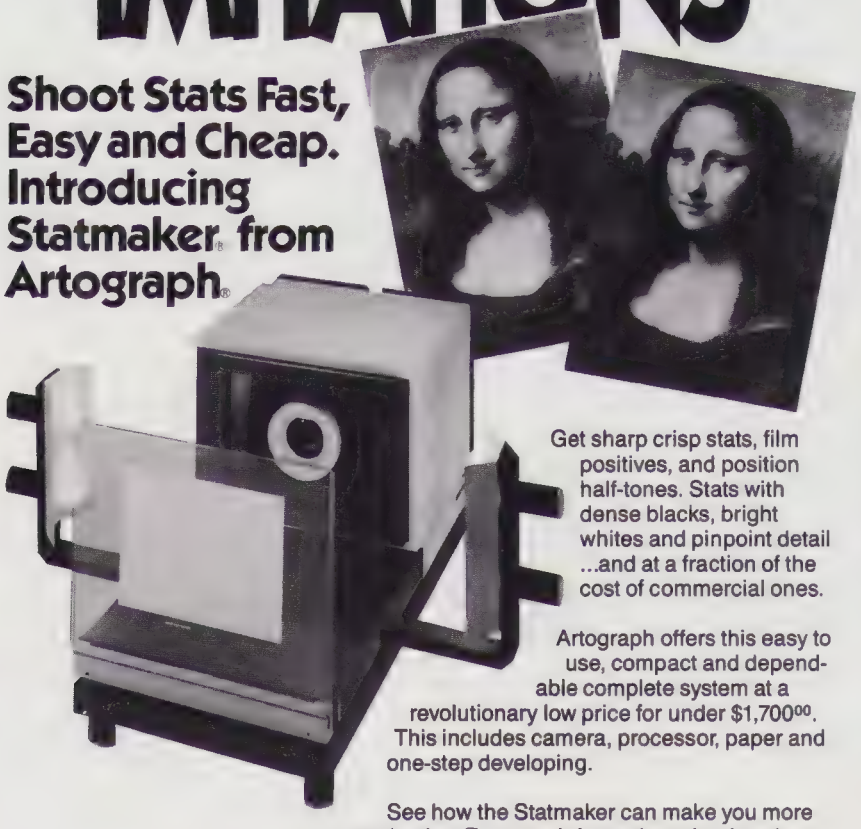

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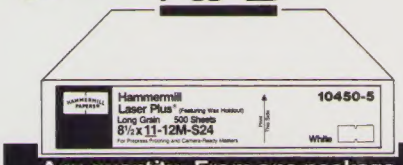

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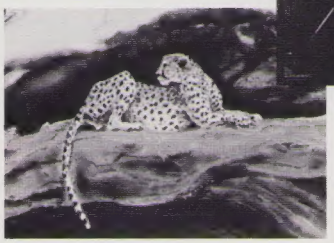

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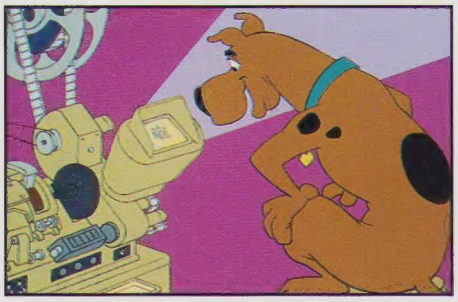

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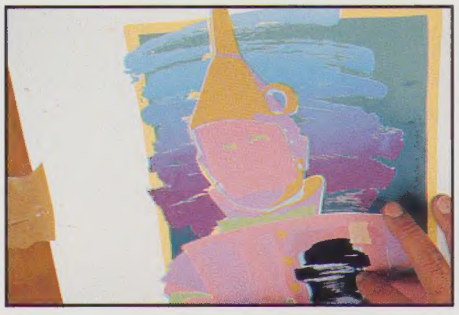

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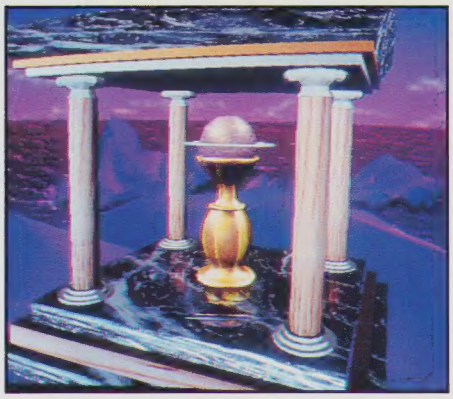

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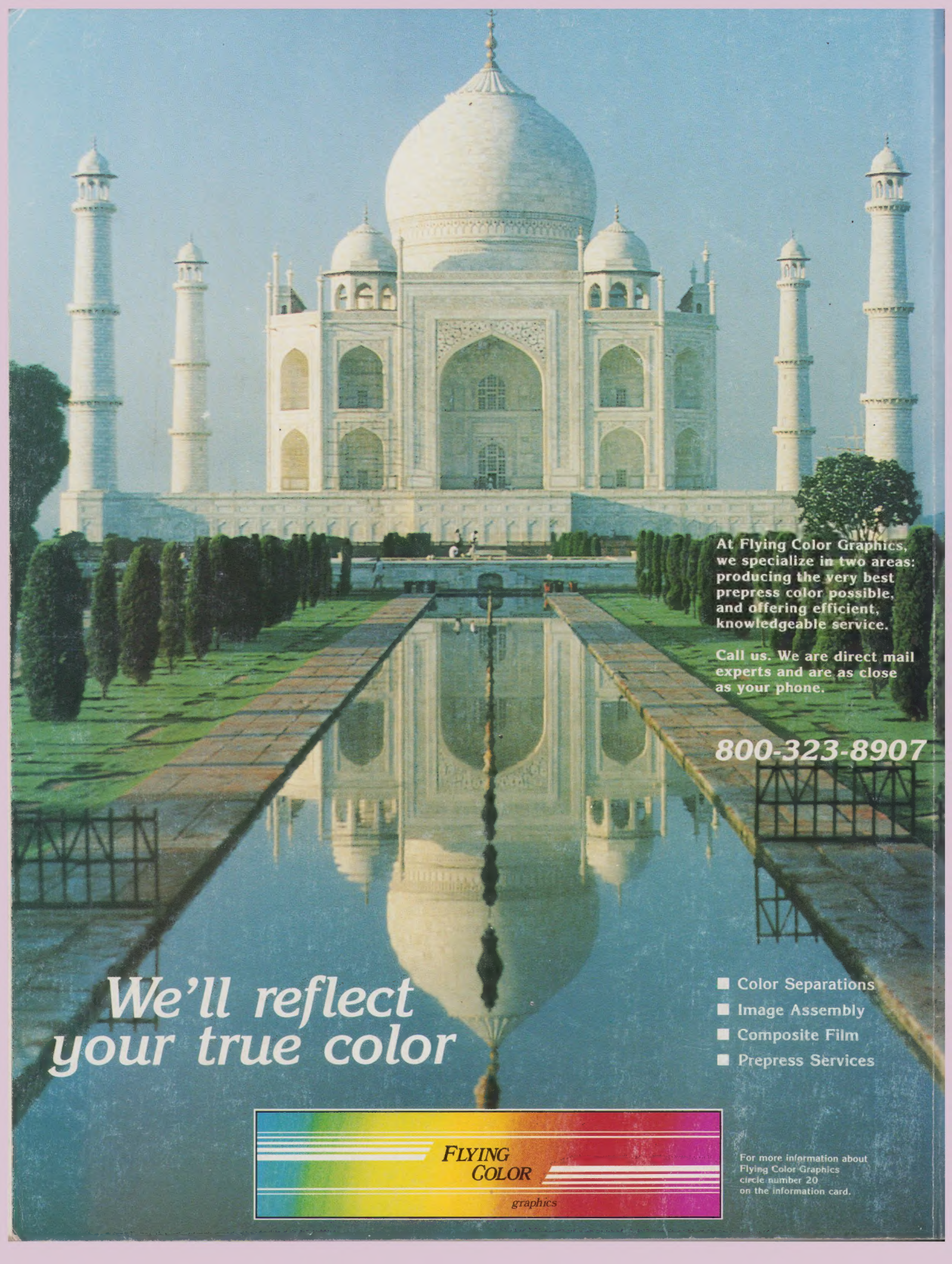
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